Public Utilities

Volume 59 No. 6 March 14, 1957

THE CAPITALIZATION OF INTEREST
By John H. Bickley

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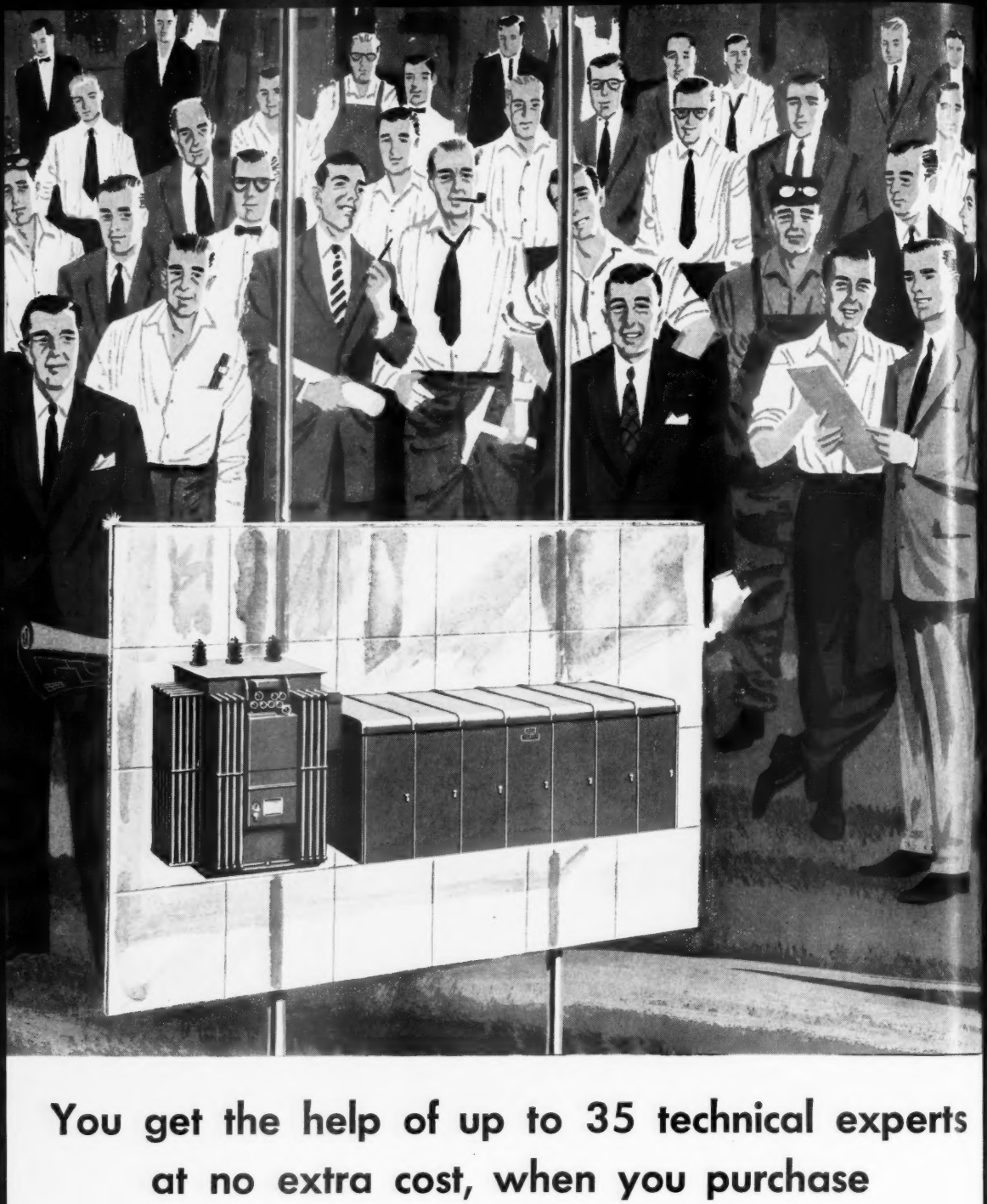
A Sound Stockholder Relations Program
By Hal D. Steward

« »

Should Government Power Be Taxed?
By Franklin H. Cook

« »

New Approaches to Conservation



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Public Utilities FORTNIGHTLY

VOLUME 59 MARCH 14, 1957 NUMBER 6

ARTICLES

The Capitalization of Interest ..... ***John H. Bickley*** **361**
This article raises some provocative questions as to the allowance for interest when money is not borrowed for construction purposes.

A Sound Stockholder Relations Program ..... ***Hal D. Steward*** **373**
Utility Management people will be interested in checking their own practices against the ideas discussed.

Should Government Power Be Taxed? ..... ***Franklin H. Cook*** **380**
This article presents interesting questions regarding the taxation of TVA or payments in lieu of taxation.

FEATURE SECTIONS

Washington and the Utilities 387
Telephone and Telegraph 391
Financial News and Comment ..... *Owen Ely* 394
What Others Think 403
New Approaches to Conservation 403
Competitive Power from Nuclear Fission 405
Oil Price Boost Hits Florida Utilities 409
National Transportation Policy 410
The March of Events 414
Progress of Regulation 417
Industrial Progress 29
• *Pages with the Editors* . 6 • *Utilities Almanack* 25
• *Coming in the Next Issue* 10 • *Frontispiece* 26
• *Remarkable Remarks* .. 12 • *Index to Advertisers* .. 42

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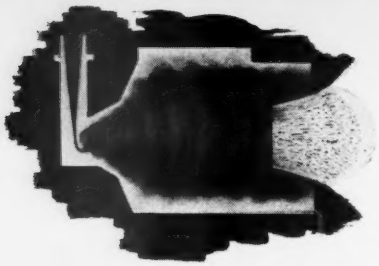

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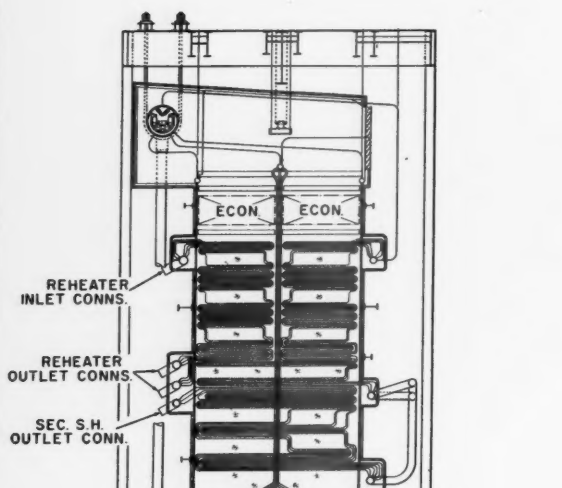

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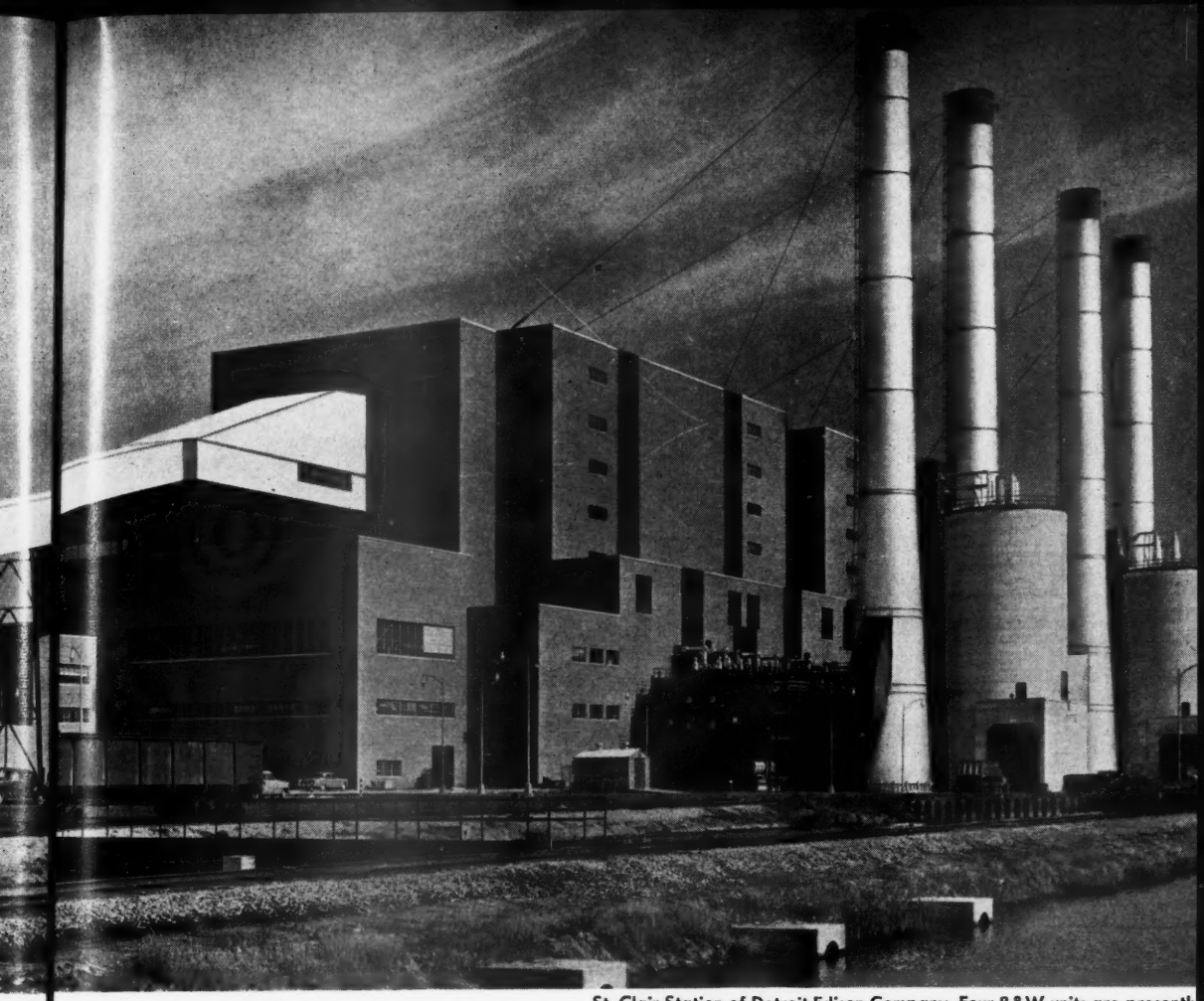

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Pages with the Editors

ONE of the most stubborn problems of regulation has been the treatment of interest during construction, or the question of whether any allowance should be made for interest paid on money borrowed for construction or other utility purposes. Such interest has usually been allowed, as part of the cost of making capital available for the rendition of public service. But care must be taken that the capitalization of interest does not result in requiring ratepayers to provide, through the charges against them for service, for capital expenditures which should be the responsibility of the utility owners.

STOCKHOLDERS are responsible for providing plant, construction funds, and funds for other corporate purposes. It is basic to the regulatory process that the ratepayers not be made to furnish funds (even under a nominal plant allowance or expense account) to be devoted to uses for which the stockholders are bound to provide. And to permit a plant or expense allowance to be diverted to dividends would be to compel the ratepayers to pay twice: dividends, in addition to the reasonable return required by law.

THE leading article in this issue raises and discusses some interesting questions

JOHN H. BICKLEY

FRANKLIN H. COOK

as to the allowance of capitalization of interest when money is not borrowed for construction purposes. There are probably differences of opinion on these questions; but the presentation of these views will be found most provocative by many persons interested in this special angle.

THE author of this leading article has a background in the field of both regulation and management. He is JOHN H. BICKLEY, who will be recalled for his work as an accounting official with five regulatory commissions: the Federal Communications Commission, Federal Trade Commission, and the public service commissions of Wisconsin, Pennsylvania, and Maryland. He is a graduate of the University of Pennsylvania ('15) and has taught accounting, finance, and investment at Lehigh University. In 1937 MR. BICKLEY entered private consulting practice and after some World War II service with the old War Production Board, he was retained by the Louisville Railway Company to make a comprehensive study of that company's business and financial condition. From 1948 to 1950 he was president of the Louisville Railway, while continuing his private consultant practice. He is still practicing as a private consultant at Skokie, Illinois.

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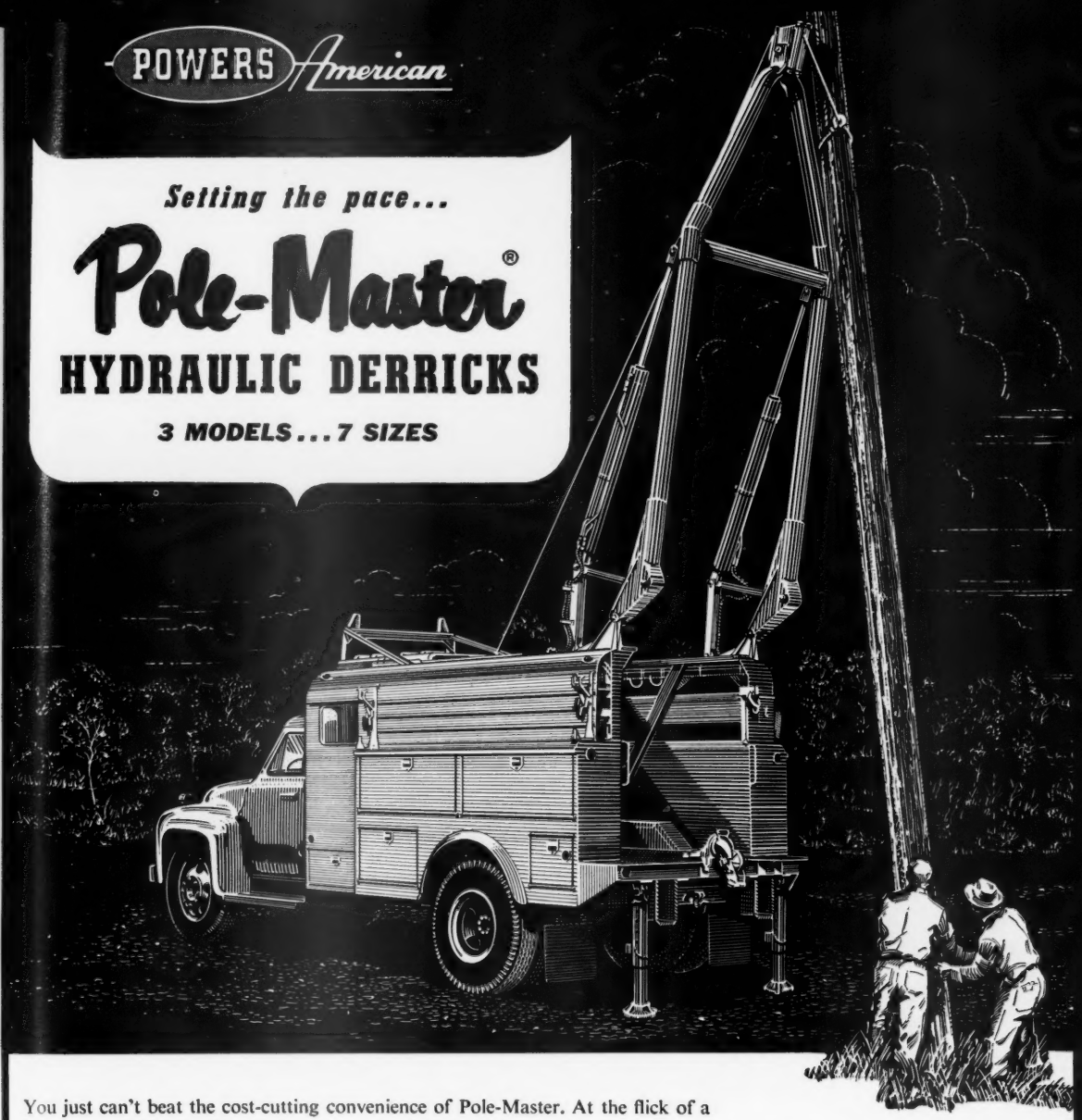

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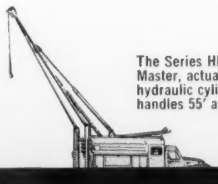

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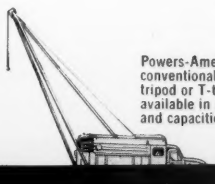

Powers-American conventional derricks, tripod or T-type, are available in all sizes and capacities.

THE article on "A Sound Stockholder Relations Program," beginning on page 373, will be found a practical and informative discussion on a subject on which comparatively little literature has been developed. While many public utility companies have maintained stockholder relations along lines suggested by HAL D. STEWARD of McLean, Virginia, management people will be interested in checking their own practices against this author's ideas. It is a "how-to-do" program setting up steps from the start of the idea to the final determination of the limitations. It raises such questions as who should be responsible for final policy decisions regarding stockholder relations programs and goes to the heart of the problem of what actually can be done, and how to create and maintain the friendship and cooperation of the stockholder.

MR. STEWARD is an Army Lieutenant Colonel who is at present chief of the community relations branch, office of the chief of information, Department of the Army. His background includes free-lance writing, newspaper reporting, and public relations assignments. He is a member of the American Public Relations Association, and was awarded a certificate of outstanding achievement in the 1953 annual awards competition of that organization.

* * * *

THE article beginning on page 380, entitled "Should Government Power Be Taxed?" presents interesting questions regarding the taxation of the Tennessee Valley Authority or payments in lieu of taxation and the untaxed distribution organizations. The author is PROFESSOR FRANKLIN H. COOK of the College of Business Administration at the Pennsylvania State University. Here we have a power system primarily supplying energy to the federal government. But now we find municipalities and nongovernment consumers claiming some sort of equity in the system by reason of the rates they have paid in the past. Where will ownership and control of TVA vest if and when TVA management repays all of its capital investment to the United States government? What practical course could be taken to eliminate the recurrent and vexatious criticism if TVA enjoys unequal advantages in the field of tax obligations?

HAL D. STEWARD

PROFESSOR COOK was born in Vicksburg, Pennsylvania, and educated at Bucknell University (AB, '33); Duke University (LLB, '36); and Pennsylvania State University (AM, '40). Prior to joining the faculty of the College of Business Administration of the Pennsylvania State University in 1937 as an instructor, he was a cost accountant with the Armstrong Cork Company at Lancaster, Pennsylvania. He became associate professor in 1946 and full professor in 1954.

* * * *

As these lines are written the tempo of congressional activity is increasing with respect to a number of measures of interest to public utility industries. There is the question of building atomic power plants and the supplemental questions of insuring the same and providing for Holding Company Act exemption of private company operators. There is the long-awaited bill to ease the regulatory burden of gas producers. In forthcoming issues we hope to cover and analyze these developments as they occur.

THE next number of this magazine will be out March 28th.

The Editors

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(March 28, 1957, issue)

★

COMPENSATING FOR SHORTAGES OF UTILITY ENGINEERS

It is well known that public utility industries are finding the shortage of trained engineers just as embarrassing and difficult as many other industries that fill the daily newspapers with their advertisements to attract such professional specialists. And certainly the manufacturers of utility equipment and appliances feel the effect of engineer shortage. Alfred M. Cooper of Indio, California, who has written several books on employee relations and personnel matters in the utility industry, has some suggestions of value for management people who are confronted with the problem of filling the gap caused by the shortage of trained engineers.

AN EXPANDING KILOWATT ECONOMY

The picture drawn by Edward A. Fontaine on the expanding status of the electric utility industry in our American economy is one which will be of interest not only to the electric utility people but those engaged in other public utility work, as well as the regulators. Mr. Fontaine, who is manager of the electric department of Stone & Webster Service Corporation, has introduced some growth pattern charts which may even startle readers of this specialized publication. To some it might appear exaggerated, but anyone in a mood to bet where the line of electric utility capacity will be in the year 2000 or the year 2100 would do well to fortify himself by reading Mr. Fontaine's carefully marshaled statistics and his objective construction of the same.

RESULTS OF LOW-COST FEDERAL FINANCING OF HYDRO PROJECTS

Dr. John Bauer, well known to many in the utility industry for his long-time leadership of the American Public Utilities Bureau in New York, makes no bones about his preference for public ownership and operation of the electric utility business. Dr. Bauer further makes it clear that he is for the welfare state. Yet, in taking issue with arguments by a Maryland University professor of economics in an earlier issue of this magazine, this author develops some provocative arguments in favor of low-cost federal financing of hydroelectric projects. He concludes that, subsidy or no subsidy, maintenance of a stable and total national economy under modern technology must be accepted as an outright federal responsibility.

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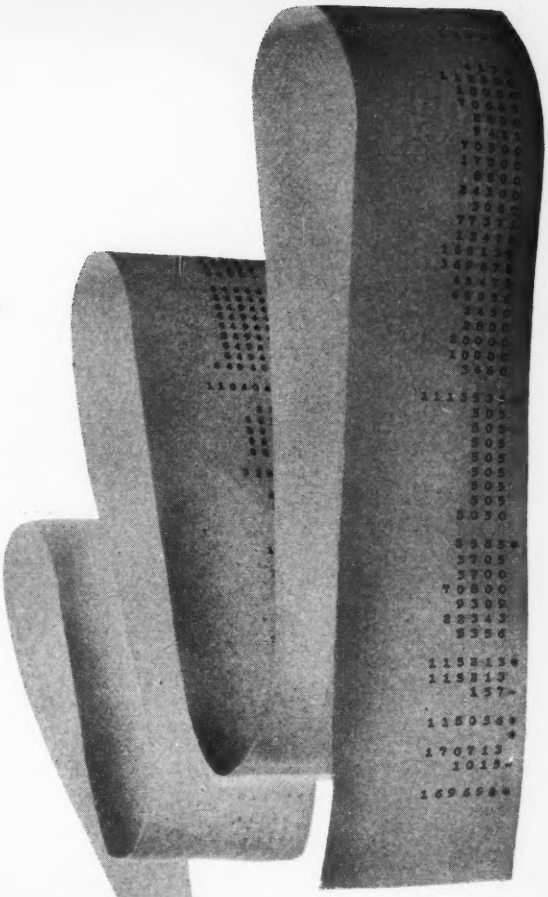

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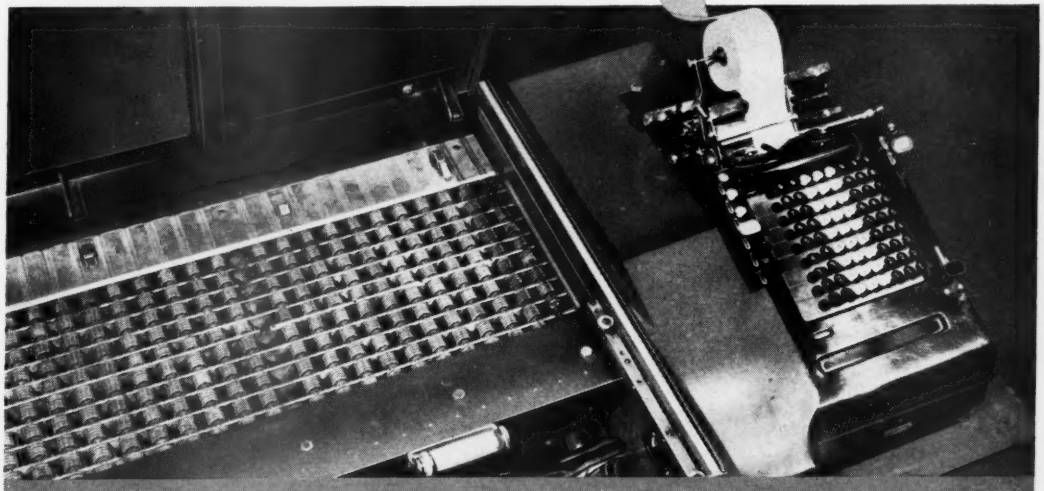

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Columnist.

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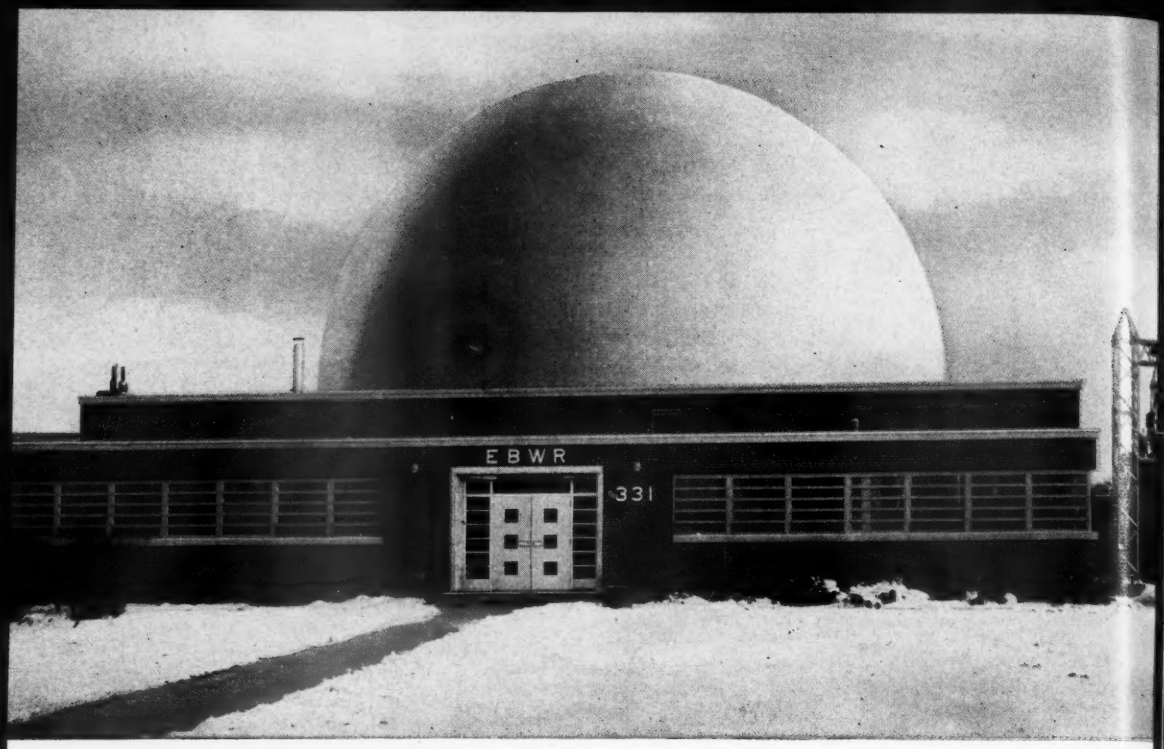

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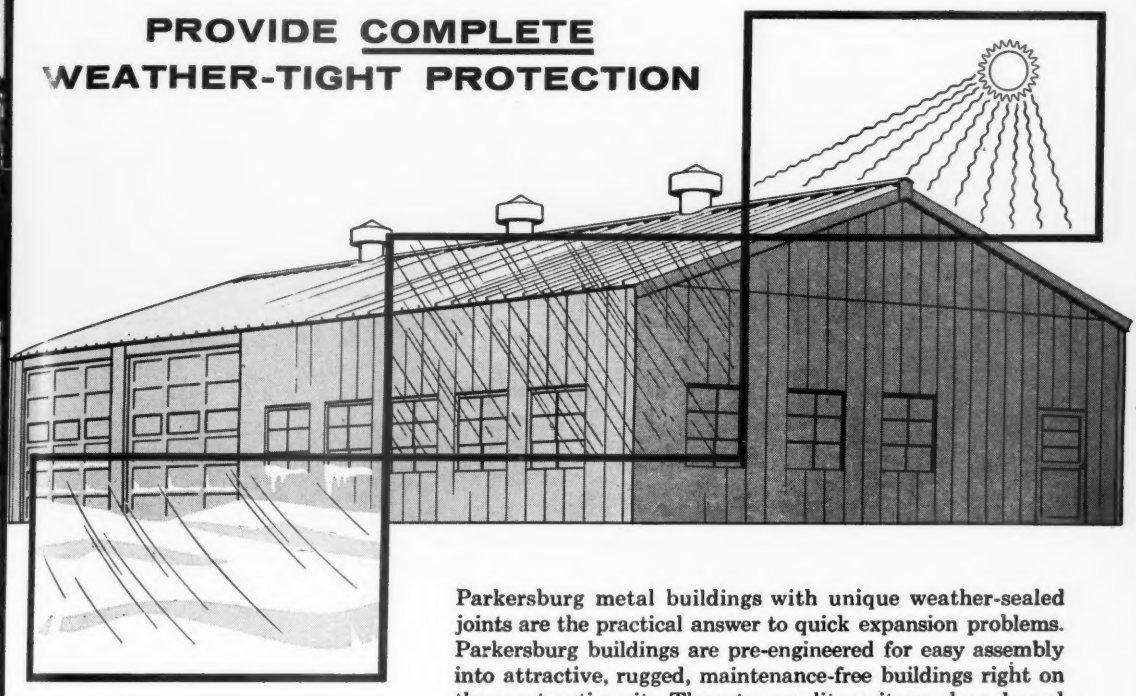

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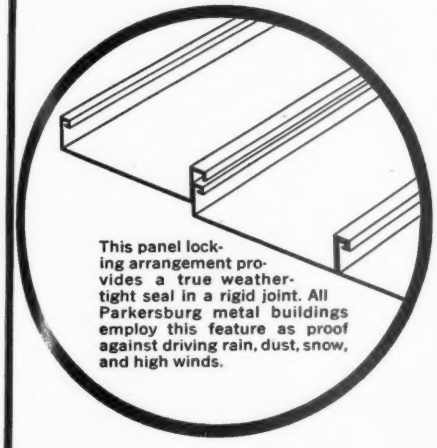

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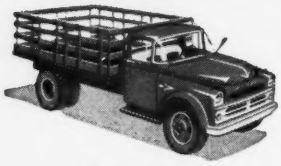

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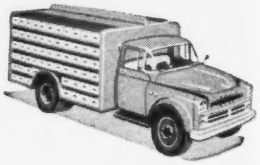

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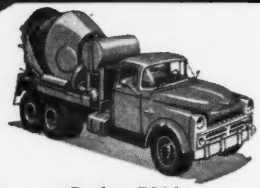
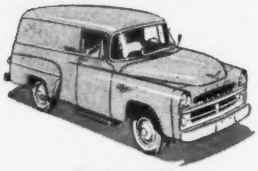
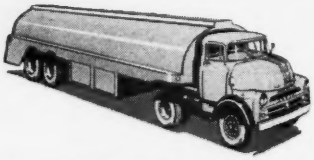


Dodge T900
Tandem



Dodge 100
Panel



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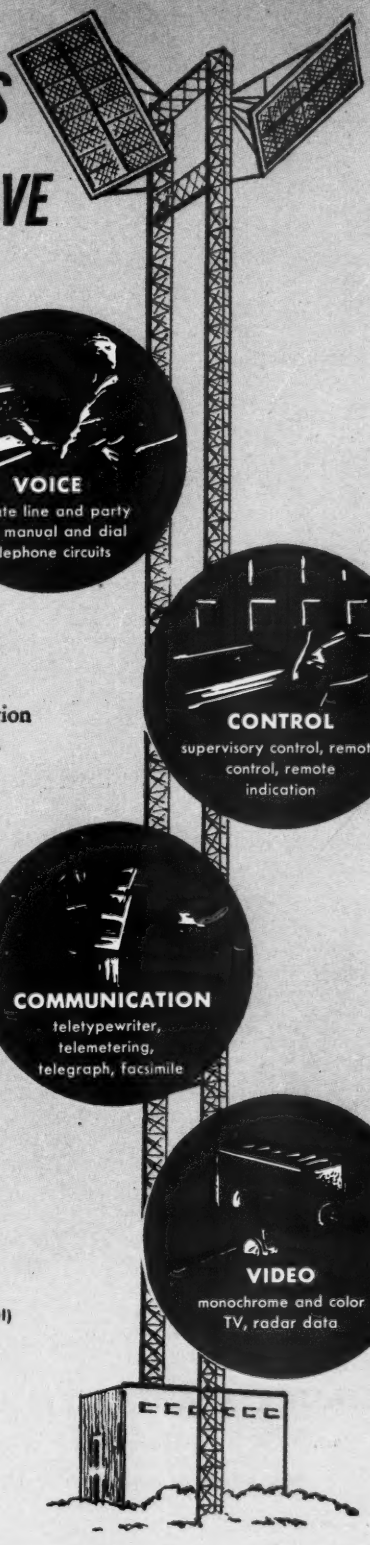

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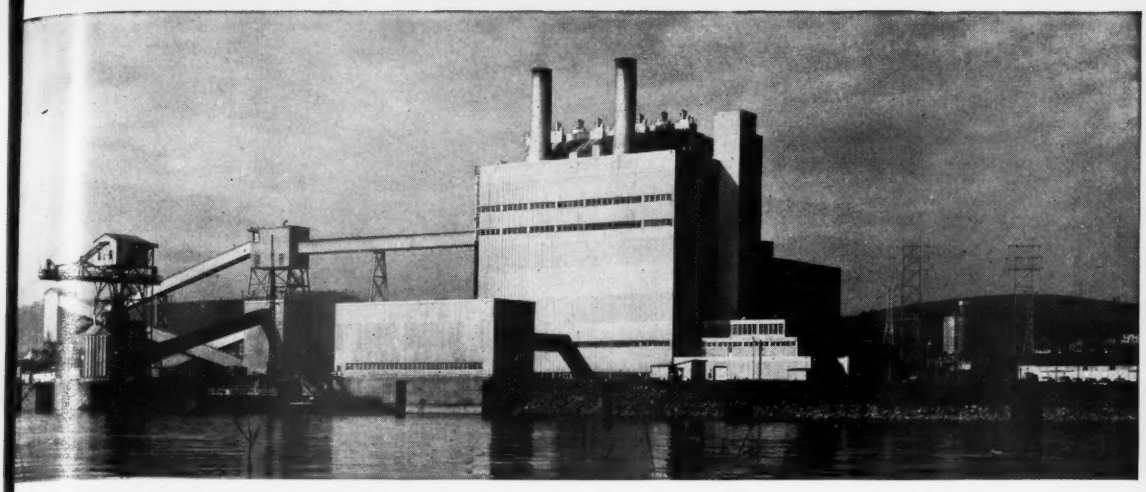

Q-Panel walls grace the new Elrama Power Plant (above) near Pittsburgh. It was designed by Duquesne Light Company's Engineering and Construction Department. The Dravo Corporation was General Contractor.

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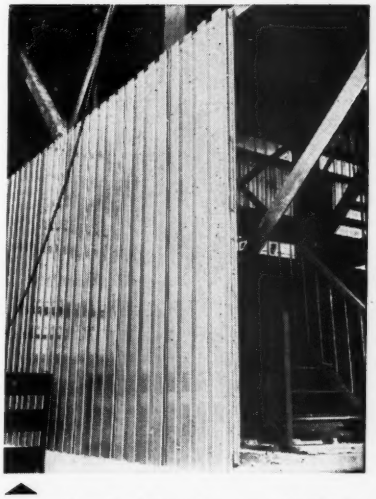
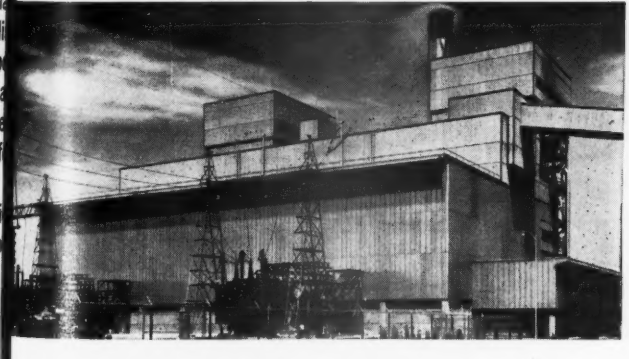
Builders of new power plants in all parts of the country have specified Q-Panel walls for the following very good reasons: 1. Q-Panels are permanent, dry and noncombustible, yet may be demounted and re-erected elsewhere to keep pace with expansion programs. 2. Q-Panels are light in weight, thus reducing the cost of framing and foundations. 3. Q-Panels have high insulation value . . . superior to a 12″ masonry wall. 4. Q-Panels are quickly installed because they are hung, not piled up. An acre of wall has been hung in 3 days. For more good reasons for using Q-Panel construction, use the coupon below and write for literature.



Q-Panel walls (above) go up quickly in any weather because they are dry and hung in place, not piled up.



More than 32,000 sq. ft. of Q-Panels were used to enclose the impressive Hawthorn Steam Electric Station (left) of the Kansas City, Missouri, Power and Light Company. Ebasco Services, Inc., designed and built the plant.

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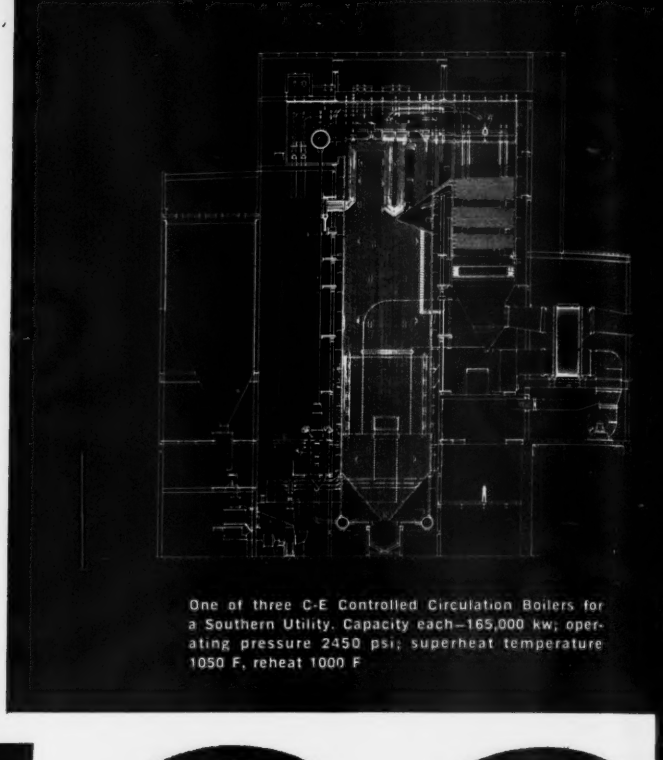

One of three C-E Controlled Circulation Boilers for a Southern Utility. Capacity each—165,000 kw; operating pressure 2450 psi; superheat temperature 1050 F, reheat 1000 F

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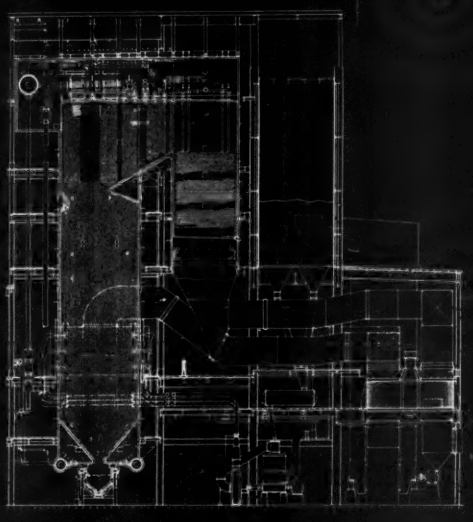
One of two C-E Controlled Circulation Boilers for a Mid-Western Utility. Capacity each — 200,000 kw; operating pressure — 2500 psi; superheat temperature 1050 F, reheat 1050 F



One of two C-E Controlled Circulation Boilers for an Eastern Utility. Capacity each — 200,000 kw; operating pressure — 2460 psi; superheat temperature 1050 F, reheat 1000 F

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Power Trend of 1956

Orders placed for C-E Boilers in this pressure range, including three purchased prior to 1955, now total 32 units with an aggregate capacity of over 5,500,000 kilowatts. This remarkable record is attributable to the proven suitability of the C-E Controlled Circulation Boiler for the highest range of sub-critical pressure and its outstanding performance, especially with respect to availability.

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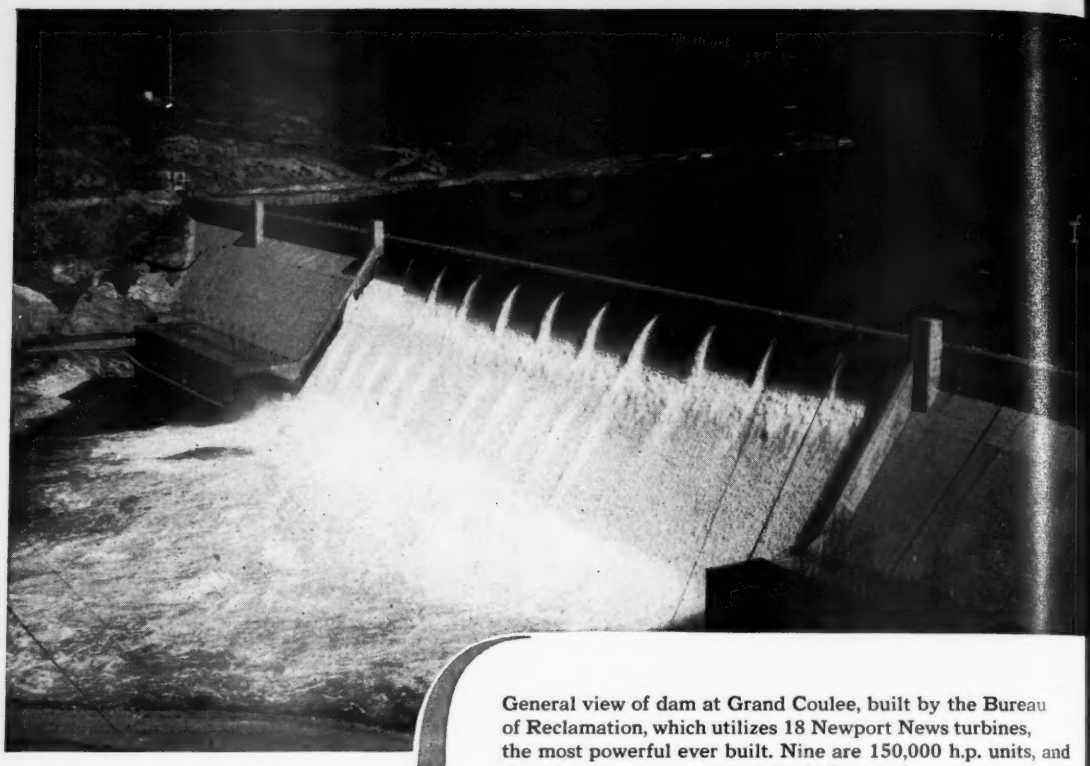

General view of dam at Grand Coulee, built by the Bureau of Reclamation, which utilizes 18 Newport News turbines, the most powerful ever built. Nine are 150,000 h.p. units, and the other nine are rated at 165,000 h.p. each.

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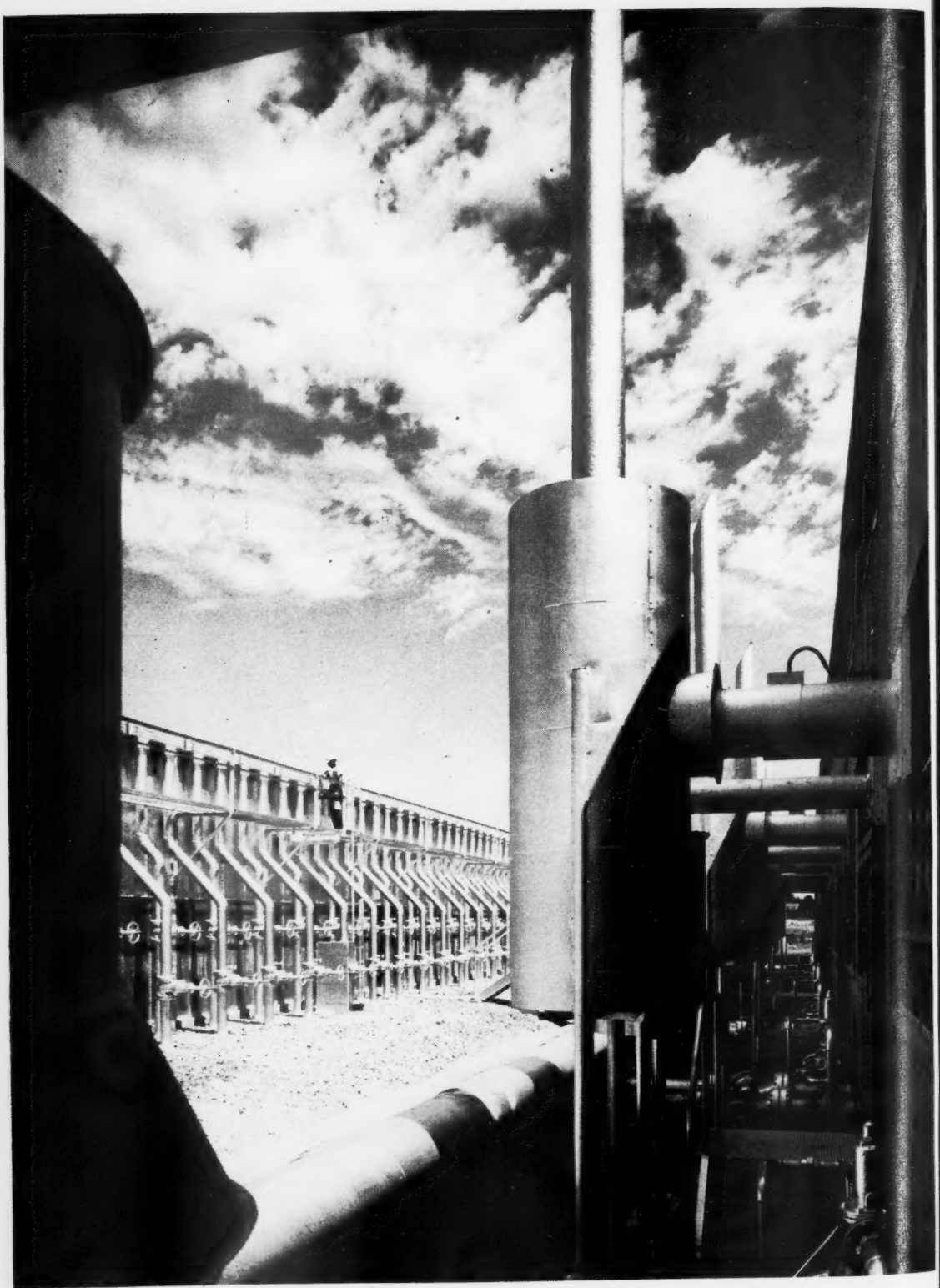
MARCH

Thursday—14 *National Electrical Manufacturers Association ends 4-day winter meeting, Chicago, Ill.*	**Friday—15** *National Association of Corrosion Engineers ends 5-day meeting, St. Louis, Mo.*	**Saturday—16** *Southeastern Electric Exchange will hold annual conference, Boca Raton, Fla. Apr. 1, 2.* ***Advance notice.***	**Sunday—17** *American Water Works Association, Southeastern Section, begins meeting, Charleston, S. C.*
Monday—18 *Institute of Radio Engineers begins annual national convention and radio engineering show, New York, N. Y.*	**Tuesday—19** *American Meteorological Society begins meeting, Chicago, Ill.*	**Wednesday—20** *American Water Works Association, Illinois Section, begins annual meeting, Chicago, Ill.*	**Thursday—21** *New England Gas Association begins annual meeting, Boston, Mass.*
Friday—22 *Pacific Coast Electrical Association, Engineering and Operating Section, ends 2-day meeting, Los Angeles, Cal.*	**Saturday—23** *National Industrial Conference Board will hold atomic energy courses for management, Rye, N. Y. Apr. 1-6.* ***Advance notice.***	**Sunday—24** *Iowa Independent Telephone Association will hold annual convention, Des Moines, Iowa. Apr. 2, 3.* ***Advance notice.***	**Monday—25** *Electric Meter Institute begins annual session, University of Denver, Denver, Colo.*
Tuesday—26 *Missouri Valley Electric Association will hold engineering conference, Kansas City, Mo. Apr. 3-5.* ***Advance notice.***	**Wednesday—27** *American Power Conference begins, Chicago, Ill.*	**Thursday—28** *Oklahoma Utilities Association begins annual convention, Tulsa, Okla.*	**Friday—29** *Texas Telephone Association ends 2-day annual convention, San Antonio, Tex.*



Courtesy, Texas Eastern Transmission Corporation

Gas Compressor Station

Public Utilities
FORTNIGHTLY

VOL. 59, NO. 6 MARCH 14, 1957

The Capitalization of Interest

Interest during construction has usually been allowed as part of the cost of utility property, but this article raises and discusses some interesting questions as to the allowance when money is not borrowed for construction purposes.

BY JOHN H. BICKLEY*

Preface

THE capitalization of interest during construction requires consideration of accounting principles and economic theory. One possible effect raises a question of law. Business policy is likewise involved, but will not be reviewed here.

When a thing is done, the reason or reasons why may be useful knowledge. And the logical sequences of the act should be understood. It has been said that any principle pushed to its utmost logical conclusion becomes an absurdity. If this is the possible fate of a principle, the reason for the absurdity should be known, so that the usefulness of the principle can be judged.

THE capitalization of interest on a company's own (proprietary) funds, which is the main topic of this inquiry, employs a principle that is not carried to its logical conclusion. But perhaps, as Disraeli remarked: "A precedent embalms a principle," or, it may be, as Lincoln said: "Important principles may and must be flexible."

* Consultant, Skokie, Illinois. For additional personal note, see "Pages with the Editors."

DURING the eight postwar years 1947-54, which was a period of unprecedented construction activity, the larger electric utility companies alone charged as a construction cost $347.2 million of interest. This was not a major component of cost; nevertheless it is a substantial sum. As a result of these charges, interest costs were reduced 14 per cent, net income was increased 5.4 per cent, and earnings on common stock equity were increased 6.3 per cent. A portion of the total interest capitalized was on proprietary funds. Hence an inquiry into the theory underlying these charges is pertinent to an understanding of utility profits.

The discussion that follows does not suggest that when a capital expenditure is contemplated, a decision as to the financial feasibility of the project should not take into consideration, first, interest on all construction expenditures, and, second, how the investment is to be financed. The interest rate that is used to determine the interest component of total cost might be the same, regardless of the means of financing. The funds might be obtained by borrowing, by sale of stock, or from retained earnings and depreciation accruals. This may appear to support a conclusion that interest should be capitalized on a company's own funds used for construction. Under certain circumstances, such interest should be capitalized, under others it should not, as will be explained.

The Importance of Plant Cost

THERE is not much uniformity in the accounting practices of corporations with respect to the capitalization of interest. There is no complete uniformity in the utility industry, and practices of individual companies have changed, even in recent years. But the plant accounting practices of public utilities are of major importance, because of the large investment in plant, and because such investment is an element in the determination of reasonable rates and earnings.

In a consideration of the accounting procedures of public utilities and common carriers on the one hand and manufacturing, mining, and other types of business enterprises on the other, recognition must be given to fundamental economic and legal differences. The first group is subject to certain restrictions imposed by public regulation; the second possesses a wider range of freedom. When an investor commits his funds in an industrial enterprise, he does so with the knowledge that the company's earnings will not be limited to a certain amount or rate. In contrast, the investor in a public utility makes his commitment with the realization that the earnings of the utility are subject to public control, that the business may not charge all the traffic will bear, and that profits are limited. After a manufacturing enterprise begins operations, it may compensate its shareholders to any extent for their failure to receive income during the period of construction, depending only upon the earning capacity of the business.

IN an industry in which the prices charged are unregulated, there is little or no relationship between the cost of property and the prices that are charged. For this reason, a meticulous accounting for investment is not essential from a business viewpoint, and a failure to capitalize the less direct elements of construction cost, real or hypothetical, causes no loss of income. However, in the case of public serv-

ice companies, the reasonableness of prices may be passed upon by a regulatory body, and, by any theory of regulation, the cost of property is an important element. Consequently, it is far more essential for utilities to include in construction costs every proper item of such cost. A failure to do so can result in loss of earnings, because capitalized interest, for example, affects both the rate base and earnings.

Prescribed Systems of Accounts

BESIDES the differences among industries and among regulated enterprises, there is an important difference in the accounting rules governing railroads and those governing electric, gas, and telephone companies. All prescribed systems of accounts permit the capitalization of interest on borrowed funds; but the rules governing railroads prohibit the capitalization of interest on proprietary funds, while those prescribed for other classes of utilities permit the capitalization of such interest.

Basically, the theory of cost is the same whether reference is made to production or operating costs or to construction costs. And if a certain item is a cost, it may be either a current expense or a capital cost, with the exception of taxes on income, no part of which is a cost of construction. Thus, labor, materials, or interest on borrowed funds may be either a current cost of the business or a cost of construction, depending upon the purpose of or the circumstances surrounding the expenditure or accrual.

But what occurs when interest on proprietary funds is capitalized? Prescribed systems of accounts should be reviewed further. According to the Uniform System of Accounts for Telephone Companies, prescribed by the Federal Communications Commission, the amount of all interest capitalized is credited to an income account. According to the systems adopted for other utilities by the National Association of Railroad and Utilities Commissioners and those prescribed by

TABLE I

Invested Capital	*Before Financing* (a)	*Additional Financing by* *Bonds* (b)	*Stock* *3%* (c)	*9%* (d)
Bonds—3%	$ 5,000,000	$ 6,000,000	$ 5,000,000	$ 5,000,000
Stock	5,000,000	5,000,000	6,000,000	6,000,000
Total invested capital	$10,000,000	$11,000,000	$11,000,000	$11,000,000
Shares of stock	50,000	50,000	60,000	60,000
Income				
Gross income	$ 600,000	$ 600,000	$ 600,000	$ 600,000
Interest at 3%	150,000	180,000	150,000	150,000
Interest capitalized (credit)	0	(30,000)	(30,000)	(90,000)
Net interest	150,000	150,000	120,000	60,000
Profit	$ 450,000	$ 450,000	$ 480,000	$ 540,000
Profit per share	$9	$9	$8	$9

the Federal Power Commission and numerous state commissions, the amount of interest capitalized is credited to an account, "Interest Charged to Construction —Credit," in the gross income deduction section of the income account. But the net effect of these systems is the same; the difference is in classification.

Results of Capitalization of Interest

THERE may now be examined the results of the capitalization of interest, and especially the effects in regard to profit. When an expenditure or an accrual for an amount payable, such as debt interest, is capitalized, it is because a cost has been incurred, and the cost is due to construction. Profit is not affected in any way. But when imputed interest on proprietary funds is capitalized, there is a different result—reported profit is increased. To observe these different results, two hypothetical cases will be presented.

Let it be assumed that a company has outstanding $5 million of 3 per cent bonds and $5 million of common stock, including reinvested earnings. The company requires an additional $1 million to finance a construction project that requires one year to complete. The money is raised before construction begins. In one case, it is assumed that the $1 million is obtained by the sale of 3 per cent bonds; in the second case, it is assumed that common stock is sold to obtain the required funds. It is assumed, further, that earnings during the construction period are $600,000. This would be 6 per cent on the $10 million of invested capital before additional securities are issued. What happens to reported profit when interest is capitalized? Table I (page 363) gives the answer. The effect of income taxes is not reflected in this table and those that follow, because this does not bear upon the principle discussed. But if gross income after taxes is to be the same, according to the two assumptions, gross income before taxes would be different.

Two basically different results are shown by Table I. First, when the additional financing is by bonds, the net interest of $150,000 and the profit of $450,000 are the same as they would have been had there been no additional construction. The interest capitalized is offset by an equal increase in interest payable. In contrast, when the additional financing is by stock, the net interest charge is reduced by the amount of interest capitalized, even though interest payable is the same as it was before the stock issue. Reported profit is increased by the amount of imputed interest charged to construction.

Two different rates of imputed interest on stock, 3 per cent and 9 per cent, are used in Table I. With the 3 per cent rate, the same as on debt, reported profit is $480,000, which is 9.6 per cent, or $9.60 a share, on the original 50,000 shares, but $8 a share on the 60,000 shares outstanding after additional financing. With the 9 per cent rate, reported profit is $540,000, which is $10.80 on the original shares, but $9 on the 60,000 shares. Thus, in order to report the same rate of profit on $6 million of stock as on $5 million, imputed interest would have to be capitalized at 9 per cent, assuming $600,000 of gross income. This may appear to be a reasonable condition. But let us examine the matter further. What theory or circumstance would justify a difference in the dollar amount of reported profit when

TABLE II

Income	Per Accounting System (a)	Interest on Stock at 2% (b)	6% (c)	9% (d)
Gross income	$600,000	$600,000	$600,000	$600,000
Interest on debt	150,000	150,000	150,000	150,000
Interest to stock	—	120,000	360,000	540,000
Interest capitalized	(60,000)*	(20,000)	(60,000)	(90,000)
Net interest	90,000	250,000	450,000	600,000
Profit	$510,000	$350,000	$150,000	0

* Assumes capitalization of imputed interest at 6 per cent.

construction is financed by debt and when financed by stock? There might be two answers to this question.

Interest on Equity Capital

First, there is an economic theory that interest on the capital provided by the owners of a business, including the equity of common shareholders, is a cost, like debt interest, which must be deducted from sales or income before profit can be determined. But this profit would be different in nature from commercial profit. If this theory is correct and one that should be adopted for accounting and business purposes, all or a part of what is called profit in business usage would be interest. Indeed, while a profit might be shown in financial statements, there may be a loss in an economic sense.

The increase in reported profit, resulting from the financing by additional common stock and the capitalization of interest thereon, is due to the theory that imputed interest on such stock is a cost. Being a cost, the interest may be capitalized; and as a result of its being capitalized, profit is increased. Hence, the increase in profit results from construction. When the additional financing is by debt, and interest is capitalized at the same rate as the interest paid, profit is not affected. Construction does not produce a profit.

The theory should be pursued to its logical conclusion. If a portion of the cost is a proper charge to construction, the

total imputed cost should be charged against current income, before profit is determined, as in the case of debt interest.

WHAT are the possible effects of this theory? Several hypothetical cases will be examined. In Table II (page 365), gross income is again assumed to be $600,000, and the results are shown when imputed interest on the total stock equity is not charged as a current cost, and when it is. Different rates of interest are used.

When interest is capitalized at 6 per cent, but imputed interest on total stock equity is not treated as a current cost, reported profit is $510,000, column (a). When total imputed interest is charged at 6 per cent, reported profit is $150,000, column (c). When the rate of interest is 2 per cent, reported profit is $350,000, and when it is 9 per cent, no profit is shown.

Next, in Table III (page 367), gross income is assumed to be $440,000. The indicated results range from a loss of $160,000 to a profit of $350,000.

Finally, in Table IV (page 369), it is assumed (1) that gross income is equal to interest on debt, and (2) that gross income is zero.

Here is another interesting array of profit and loss. In column (a), where gross income is just equal to bond interest, a profit is nevertheless reported, due to the capitalization of interest on equity funds. This would not have been the case had the financing been by bonds. Had construction funds been provided by the sale of 3 per cent bonds, and a 3 per cent capitalization rate been used, the net interest would have remained $150,000. In column (b) where gross income again equals bond interest, but interest on common stock is charged as a cost, there is a loss of $300,000. In column (c) even though there is no income available for debt interest of $150,000, a loss of only $90,000 is shown. Had the financing been by debt, the loss would have been $150,000. In column (d), where again there is no income available for debt interest, there is a loss of $450,000.

Equalization of Profit

IT has been seen, in Table I, that in order to have the same rate of reported profit on the additional stock as on the original, or $9 a share, imputed interest would have to be capitalized at the same rate, or 9 per cent. Reported profit would be $540,000, and the rate would then be the same, whether or not there were additional construction. Profit would thereby be equalized. Now the same result would be accomplished if gross income during the year of construction were $690,000, instead of $600,000, and interest were not capitalized ($690,000 less $150,000 of debt interest). Gross income of $690,000 would be 6.9 per cent, instead of 6 per cent, on the original $10 million of invested capital, and 6.27 per cent on the $11 million, after the additional stock issue. There is an important difference, however, between the two situations. In the second, the profit of $540,000 would come from an increase in earnings, or higher earnings during construction than would be required to maintain 6 per cent in the absence of construction. In the first instance, $90,000 of the $540,000 would result from construction and the capitalization of imputed interest.

The foregoing circumstances suggest that when construction is financed by equity funds, one of two things must be accomplished for the purpose of equaliz-

ing reported profit per share: (1) earnings (gross income) must be increased, or (2) imputed interest must be capitalized at the same rate as the return on stock before additional construction. If the former is the correct solution, earnings must be increased because construction is being undertaken, and before the additional property contributes to earnings.

The Capitalization of Interest On Debt Funds

We will return to additional financing by bonds. When funds are obtained in this manner, and gross income is $600,000, Table I, this is 6 per cent on prefinancing capital, and 5.45 per cent on the postfinancing. If earnings should be equalized, or in order to have the same rate of return after as before additional bonds are issued, gross income would have to be $660,000. Profit would thereby be increased from $450,000 to $510,000, or from $9 to $10.20 per share of stock. The same per share earnings would be reported if interest on debt funds were capitalized at 9 per cent, or in the amount of $90,000, which, however, would exceed the actual cost. The consequences of this procedure are evident.

Where interest on debt funds used for construction is capitalized at a rate exceeding the actual cost, there are two results. First, reported profit in the year of construction is increased, and the additional profit results from construction. Second, since the amount capitalized is included in plant, the excess over cost may become a basis for a later return to the owners, even though the additional amount capitalized increases current profit, as reported, in the year of construction.

The Nature of the "Profit"

That the "profit" shown by the various tables is not the same in nature, must be clear. If cost includes imputed interest on the funds provided by owners, the residue, if any, is different from profit in accounting and business usage. In Table II, for example, where the additional financing is assumed to be by common stock, "profit" ranges from zero to $510,000. In Table III, it ranges from a loss of $160,000 to a profit of $350,000.

When imputed interest on proprietary funds is regarded as a cost, the rate of interest must first be decided, for this rate will determine the nature of the residue. Let us revert to Table II. In column (b),

TABLE III

Income	*Per Accounting System*	*Interest on Stock at 2%*	*6%*	*9%*
Gross income	$440,000	$440,000	$440,000	$440,000
Interest on debt	150,000	150,000	150,000	150,000
Interest on stock	—	120,000	360,000	540,000
Interest capitalized	(60,000)*	(20,000)	(60,000)	(90,000)
Net interest	90,000	250,000	450,000	600,000
Profit or (loss)	$350,000	$190,000	$(10,000)	$(160,000)

* Assumed capitalization of imputed interest at 6 per cent.

a rate of 2 per cent is used. If this rate is taken to be that on a "riskless" investment, assuming there is such an investment, the residue reported as profit would be compensation for risk or uncertainty, particularly in the case of a corporation where wages of management are charged as a cost of production.

When imputed interest on proprietary funds is capitalized at 6 per cent, and the same rate is taken to be the cost of all such funds (assumed to be common stock only), it is questionable if 6 per cent is the cost. The 6 per cent may include "pure" interest and some allowance for uncertainty. The residue would include compensation, or a return, for uncertainty that is not charged as a cost.

If adequate compensation for the risk or uncertainty of common shareholders is taken to be, say, 9 per cent or more, and that rate is used for the capitalization of interest, two results will follow, under the prescribed accounting rules for electric, gas, and telephone companies. First, there will be included in plant cost the return for risk on the portion of proprietary funds used for construction. This may become a basis for a future return. Second, current profit will be increased by the amount of interest capitalized. Thus, the owners would have a current profit from construction, equal to the return for risk on funds used for construction, and that return would be included in the property on which a future return would be expected.

The foregoing observations may suggest the implications of the capitalization of interest on proprietary funds, and especially on capital financed by common shareholders. They may suggest also the implications involved when a decision is made as to the rate of interest to be capitalized.

The Accounting Entries

If imputed interest on all equity funds were charged as a cost, what would be the offsetting credit? In the case of debt interest, the credit is to a liability account, for the interest is payable as a contractual obligation. But if imputed interest were charged against income, could it be said that it is because a liability has been incurred? No such liability exists. Since it is not a liability, present or deferred, there are only two choices remaining for the credit: (1) as a reserve, and (2) as income. But what would be the nature of the reserve? If it is a reserve for dividends, it is in the nature of surplus. If the credit is surplus, or income, there is the anomalous situation of a cost creating income. When imputed interest is charged, a dividend might be declared in an equal amount. The declared dividend would be a liability to shareholders. Thus, the effect is the same as when a dividend is declared out of profit. But, in the first instance, the dividend would be charged as a cost; in the second case, it is a distribution of income.

There might be a solution for this problem, but it is not a complete one, as will be shown. Since the imputed interest is charged as a cost, with an offsetting credit to income, the two might be disregarded. But then the accounts are not consistent. To the extent that interest is capitalized, it is treated and recorded as a cost; but the total of imputed interest is not treated in the same manner, as it is in the case of debt interest.

Even though an offsetting credit for im-

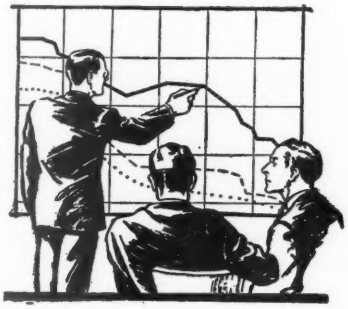


TABLE IV

Income	*No Interest On Stock (a)*	*Interest On Stock At 6% (b)*	*No Interest On Stock (c)*	*Interest On Stock At 6% (d)*
Gross income	$150,000	$ 150,000	$ 0	$ 0
Interest on debt	150,000	150,000	150,000	150,000
Interest on stock	0	360,000	0	360,000
Interest capitalized	(60,000)	(60,000)	(60,000)	(60,000)
Net interest	90,000	450,000	90,000	450,000
Profit or (loss)	$ 60,000	$(300,000)	$(90,000)	$(450,000)

puted interest were made to income on surplus, the latter would be increased by the capitalization of interest on equity funds, as shown by Table V (page 371).

THE interest on debt of $180,000, shown in column (a) of Table V, is offset by a liability account, interest accrued or payable. This liability is not affected by interest capitalized, and neither is profit. But a different result is obtained when the additional financing is by stock. Profit is increased $30,000. The $180,000 of imputed interest, column (b), is offset by an equal credit to income, in contrast with a credit to a liability account. The $30,000 of interest capitalized on stock reduces the total income charge for interest, but it does not reduce the $180,000 credit to income for total imputed interest. Consequently, the capitalization of interest on proprietary funds will always result in the reporting of a profit due to construction, whether or not total imputed interest is treated as a cost.

Dividends and the Capitalization Of Interest

ANOTHER subject must be considered—one that is related to profit; namely, dividends. Are those, too, a cost? Dividends are usually thought of as a distribution of profits and profits are usually regarded as the amount remaining after expenses are deducted from sales and other income. Perhaps these views are erroneous. If they are, business and accounting practices in income reporting

must be changed; but one might add that they are not likely to be in this respect. However, if imputed interest is a cost, dividends would likewise be a cost, because they are a part, or all, of imputed interest.

LET us revert to Table I, and assume that all profit is paid out as dividends. This assumption is valid. If the additional construction is financed by debt money, $450,000 of profit would be available and an equal amount of dividends would be paid. But through financing by equity money, $480,000 or $540,000 of dividends would be paid. If, as in column (a) of Table IV, gross income is only equal to debt interest, there nevertheless would be reported profit of $60,000, and this could be paid as dividends. By increasing the capitalization rate to 10 per cent, $100,000 of dividends could be distributed. Over a period of years there could be large accretions of profit and larger dividends. But what is the source of the larger dividends? Construction is the answer. Hence, the more the construction, and construction alone, the higher the dividends, provided construction is financed by the owners. With a sufficient volume of construction, a profit could be reported, even though there is an operating loss.

At this point, a legal question might be raised. If, as in column (a) of Table IV, a profit of $60,000 is reported and a company has no previously accumulated surplus, could the $60,000 be paid as dividends without impairment of capital? By the capitalization of interest on a company's own funds, assets would be increased $60,000. Since the interest capitalized is not offset by a liability for interest payable, net assets would likewise be increased $60,000, or by the amount of reported profit. But this profit results from construction. Legally, can there be such profit?

When Is Profit Realized?

ANOTHER aspect of profit must be examined. When is profit realized? The answer to this question, at least from an accounting viewpoint, will be found in pronouncements by the committee on accounting procedure of the American Institute of Accountants:[1]

> Profit is deemed to be realized when a sale in the ordinary course of business is effected, unless the circumstances are such that collection of the sale price is not reasonably assured. (Page 11.)
>
> It is generally recognized that income accrues only at the time of sale, and that gains may not be anticipated by reflecting assets at their current sales price. (Page 34.)

There are other statements to the same effect (see pages 95, 100, 105), and in all the first test of profit realization is the effectuation of a sale. Yet it is clear that the capitalization of interest on a company's own funds results in an increase in reported profit. It should be equally clear that the process of plant construction does not create realized profit, and that a dividend from income can arise only through profit, realized by sales, and not by construction.

A Double Return

BY reason of the fact that interest capitalized becomes a part of the property

[1] "Restatement and Revision of Accounting Research Bulletins."

base on which future earnings are computed, the interest capitalized on equity funds provides not only more reported profit during construction, but also becomes a basis for future earnings and dividends. Thus, if all the profit stated in column (c) or (d) of Table I were distributed as dividends, shareholders would later receive dividends on dividends already received. The difference between a distribution of all and a portion of profits is only one of degree. It might be said that in such cases shareholders do not receive dividends on dividends, but rather that the later dividends are provided by earnings.

This is so, but a portion of the earnings, and thereby a portion of the dividends, results from the capitalization of interest which was paid as dividends.[2]

A New Company Engaged in Its Initial Construction

THE discussion, so far, has been in reference to an established business which is engaged in both production and construction. Brief consideration will now be given to a newly organized company at the time it is engaged in the construction of its initial plant, and before production is started and earnings are realized. Two different assumptions will be made: (1) that plant construction is financed wholly by a sale of bonds, and (2) that financing is entirely by common stock. In both cases, it is assumed that construction expenditures, other than interest payable, amount to $4,750,000. The necessary funds are raised before construction begins. Construction requires one year for completion, and at the end of that period the plant goes into production.

WHEN the financing is by debt, interest may be capitalized at the amount accrued as payable during the construction period, but any interest received on the funds pending expenditure would be credited.

The latter possibility is of no significance to this discussion. Over a period of one year, the interest would amount to $250,000, at 5 per cent on $5 million, which is the amount that would have to be raised in order to provide $4,750,000 for other

[2] *Cf.* Henry Rand Hatfield, *"Accounting, Its Principles and Problems,"* pp. 68-70, D. Appleton & Company, New York, 1927.

TABLE V

Income	*Additional Financing by* *Bonds* *(a)*	*Stock* *(b)*
Gross income	$600,000	$600,000
Interest on debt, 3%	180,000	150,000
Interest on stock, 3%	150,000	180,000
Interest capitalized (credit) 3%	(30,000)	(30,000)
Net interest	300,000	300,000
Profit	300,000	300,000
Add: Interest on stock	150,000	180,000
Profit	$450,000	$480,000

construction costs and to pay the interest. As construction progresses and interest is accrued, the interest is capitalized. The total cost is $5 million. If the bonds were sold at a discount and no interest paid during construction, there would be the same result, provided the discount were capitalized. If the capitalization rate exceeded the actual rate of interest, a surplus would be recorded.

A word should be added at this point. Interest should not be compounded by the capitalization of interest on interest already charged to construction.

WHAT occurs when the financing is by sale of common stock? It is assumed that interest is capitalized in the same amount as when the financing is by bonds, and that this interest is again $250,000. Stockholders must pay in either $5 million or $4,750,000, depending upon whether or not they receive a return during the construction period. Let us examine each of these conditions.

If stockholders pay in $5 million, and $250,000 of this amount is capitalized and paid to them as dividends, which might be called interest on instalment payments, two results ensue and a question is raised. First, if after the property is placed in operation, a return is based on the total cost of $5 million, the stockholders would receive, or there would accrue to their benefit, a return on the return they have already received, through the capitalization of interest and the payment to them of the same amount. Second, they are assured their return before operation and the realization of profit; but after operations have started, dividends are dependent upon earnings. Thus, there is no uncertainty as to the return during the construction period, but there may be substantial uncertainty thereafter.

NOW as to the question: Can a company have income or a profit before it is in operation and sales being made? This question was raised before and it was concluded that profit can be realized only through sales. Since a dividend from income, whether called a dividend or interest, can result only from sales at a profit, or from other income (the latter may be ignored for our purposes), a return to shareholders during construction and before profit is realized must be a return of, and not a return on, capital. They take out of their business a portion of what they paid in. This is the same, in effect, as issuing the stock at a discount and capitalizing the discount, provided no return is paid during construction, which there then would be no need to do. But the capitalization of stock discount is prohibited, and properly so.

The situation is different when interest is capitalized on stockholders' funds, but not paid. If construction requires $4,750,000 of $5 million paid in, and $250,000 is capitalized as interest, but not paid, the $250,000 would be available for working capital. The interest capitalized would be credited to capital surplus, as the difference between total assets and the amount paid in. Thereafter, there would be no possibility of a double return. The company would have $5 million of plant and $250,000 of working capital, or a total of $5,250,000, on which a return could be expected.

A Sound Stockholder Relations Program

This article will be found a valuable addition to stockholder relations. While many public utility companies have maintained stockholder relations along lines suggested by this article, management people will be interested in checking their own practices against the ideas discussed.

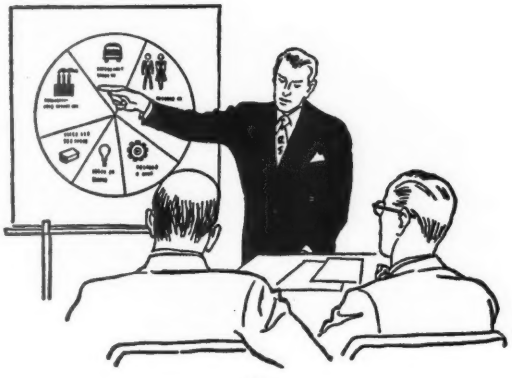
By HAL D. STEWARD*

Most public utility companies are keenly aware of the importance and practical value of a comprehensive and consistent stockholder relations program. Today increasingly more money, time, and effort are being expended on this phase of public relations.

Perhaps the most important benefit derived by a utility company from such a program is the likelihood that the company's securities will be properly evaluated in relation to other concerns operating in the same or closely allied fields, and that because of the program the market price of the company's stock will reflect fully and accurately the company's position, earnings, and prospects.

The time has passed when company officials can still believe that the only way to work well with stockholders is to carry on the business as it should be carried on and tell the stockholders only "what they should know."

Well-informed stockholders can be one of a company's strongest assets. The informed stockholder is usually the last person to want to interfere with smooth operations. When he is convinced that the company is in honest and competent hands he is most willing to leave its direction in those hands. But a stockholder without full and accurate information can be a



* Lieutenant Colonel, USA. Chief, community relations branch, office of the chief of information, Department of the Army. For additional personal note, see "Pages with the Editors."

distrustful, displeased, and indifferent one.

No one will take exception to the fact that it is much better for a company to have warm, active friends than enemies or dissatisfied critics. Each stockholder who becomes a supporter for a company gives it added strength. And in times of stress the public will be inclined to believe the stockholder rather than the company official.

In creating a sound stockholder relations program there are certain basic steps that must be taken. They are:

Determining the jobs to be done.

Assigning responsibility for each task in the stockholder relations program.

Setting up the organization to do the job.

Obtaining outside help, if necessary.

Limitations of the service to be offered must be established.

Every corporation has a distinct personality that sets it off from other corporations. This corporate personality makes its public impression by reason of its dominant characteristics. Therefore, the first step in a stockholder relations program is to discover this corporate personality in all its varied attributes, so that the company and its accomplishments can be made to stand forth clearly against the background of its field of operation.

A WELL-MANAGED company possesses distinctive characteristics such as these:

It may have earned a profit and paid a dividend year after year since it was formed.

It may have a conservative dividend policy that appeals to certain classes of investors.

It may pay no dividends and its earnings record to date may be limited, but despite this it may still appeal to investors. In this case, however, there are probably underlying factors that point to a sound foundation and an almost certain future growth.

This list of corporate attributes is, by necessity, incomplete. Many convincing points of distinction may be found in the most unexpected phases of corporate operations. Because of this it is necessary that a thorough examination be undertaken of the company's history, current situation, and prospects as a preliminary to formulating a stockholder relations program.

To begin such an examination it is wise to start with a check list of items that will probably result in the finding of points of distinction that will be promising. Here is an example of such a check list:

1. The economy of the area.

2. Who are the company's principal customers, what is the company's position in its field, and what are its prospects?

3. Population of the area to include the degree to which it is urban or rural, the size and character of the communities the company serves, and the trends of total population and its distribution.

4. The types of industry and agriculture in the area.

5. Composition of the utility's over-all business and what proportion of the total revenues are derived from residential, rural, small commercial and industrial, large industrial, and other types of customers.

6. Analyze in terms of dollar revenues

of kilowatt-hours or cubic feet of gas consumption.

7. Determine the number of customers served as well as the various unit measurements per customer.

8. Since public utilities are a regulated segment of industry, the rate situation is of interest.

9. Collect information on physical equipment to include its cost and depreciation.

10. Analyze company's construction and development program.

Each company will, of course, require its own particular check list; however, the one presented here is sufficient to illustrate the point.

ONCE a company has been analyzed as suggested to determine its corporate personality, a sound stockholder relations policy and program must be created and established. And this policy and program should be built on this basic and important premise:

> Company conditions will be painted as they are to stockholders and not as management might like to have stockholders think they are.

Practice and experience have proven this to be the soundest policy. Stockholders think more of the company for doing this and have more confidence in what it tells them. The intelligence of the stockholder must not be underrated or ignored.

Well-informed stockholders can help a company in its community relations activities. Few if any voices raised on behalf of a company are accorded more respectful hearing than those of community leaders who are stockholders. When a speech is to be made about the company and its activities before an important body, who can better represent the company than an outstanding stockholder? He can speak with complete freedom and with the authority of one who knows much about the company.

What should be the objectives of a stockholder relations program? Basically, the aim should be to cultivate the investor's friendliness and loyalty to his company.

W. HOWARD CHASE, former president of the Public Relations Society of America, cites these as specific objectives:

1. Keep the stockholders' welfare constantly in mind in every decision which could possibly have a bearing on the investor; fair play is an unbeatable force in good public relations.

2. Strive for corporate attainment and leadership which will build stockholder confidence and pride of ownership.

3. Gain their steady interest by

¶ "WELL-INFORMED *stockholders can be one of a company's strongest assets. The informed stockholder is usually the last person to want to interfere with smooth operations. When he is convinced that the company is in honest and competent hands he is most willing to leave its direction in those hands. But a stockholder without full and accurate information can be a distrustful, displeased, and indifferent one.*"

keeping them informed about the things that matter to them; take them into your confidence whenever possible; try to give them advance notice of company events and developments in which they might be interested.

4. Enlist their active help in promoting the company's welfare; educate them in corporate problems, in product promotion, and in their rôle as corporate members.

5. Take full advantage of every opportunity to increase the investor's confidence, respect, and appreciation for the company and its management.

These objectives can apply basically to any company. They certainly can be used as a starting point for any company setting up a stockholder relations department for the first time.

Now comes the question of who should be responsible for exercising final policy decision regarding stockholder relations matters? Only the corporation's chief executive officer should have this task. This is necessary because most questions that arise in this field are intimately connected with high-level corporate policy. Furthermore, whoever administers the program should have direct and ready access to the company's top official. If this is not done, confusion will develop and many opportunities for effective action will be lost.

Who should administer the stockholder relations program and where it should fit into the corporate setup depend largely upon the competence of specific individuals, their relative status in the company organization, and the position of outside counsel, if one is retained. Of course, the most logical executive within a company to handle the general supervision of the program is the director of public relations. If the company does not have such an officer then the company treasurer or secretary would be logical choices for the assignment.

In furthering their stockholder relations many companies with large numbers of stockholders retain full-time staffs devoted exclusively to this important activity. This staff is normally a part of the company's public relations department.

However, regardless of who heads the stockholder relations program, he must have the closest liaison with the corporation head and the chief fiscal officer. If the company retains outside stockholder relations counsel, the administrator of the program within the company becomes the point of contact regarding program details.

It is comparatively simple for the large corporation to organize and set up a comprehensive and effective stockholder relations program. Such a company usually has enough stockholders to warrant employment of the specialized personnel required.

However, the smaller corporation or the company with a smaller number of stockholders, regardless of the volume of business, can solve its problem by seeking the services of a specifically qualified public relations counsel to assist in the task of maintaining effective contact with the stockholders and the investing public.

Services provided a corporation by an outside public relations counsel are many and varied. Perhaps the most important is advice and counsel as to how different corporate activities or developments tend

Importance of Personal Contact

"In any stockholder relations program the importance of personal contact with stockholders cannot be overemphasized. Stockholder relations department people should make periodic visits to all available important stockholders, and as many of the others as possible. They should go on these visits armed with full information about the company and make it a policy to answer all questions on the stockholder's mind. When they return from such visits they should make a full written report to the president and other interested officers of the company. These reports can serve as a background on which to plan further stockholder meetings, annual reports, and to keep the principal officers advised of current thinking by stockholders."

to affect investment opinion. Expert counsel is also better equipped to prepare written material in keeping with the requirements of the financial field, the news media, and the stockholders. Furthermore, such counsel knows when and to whom material should be sent. And another important asset of outside counsel is the objectivity it offers a company.

A stockholder relations program is limited by the following factors:

Number of stockholders in a company.

Personnel available to administer the program.

Financial ability of the company to support the program.

Objectives of the program as laid down by company policy.

A careful analysis should always be made to determine how the program will

fit into the over-all operations of the company. And everything the program sets out to accomplish should be in keeping with the over-all objectives of the company's operations. Unless this principle is followed the stockholder relations program will prove of little worth to the corporation. The program must dovetail with the company's mission.

THE director of stockholder relations for a large company could profitably undertake the following duties and responsibilities:

1. Counsel the following executives concerning stockholder relations: board of directors, executive committee, finance committee, and the executive officers such as the president, financial vice president, treasurer, secretary, controller, and certain department heads.

2. Supervise the handling of financial publicity by:

a. Seeking out and developing news of interest to stockholders.

b. Seeking out and making personal contacts with financial news media.

c. Arranging and setting up interviews with principal officers of the company for representatives of financial news media.

d. Supervising the preparation of news releases, annual reports, dividend declarations, management changes, financing, annual meetings, executives' speeches and articles, proxy fights, etc.

e. Supply information to statistical agencies, brokerage firms, investment services, etc.

3. Supervise stockholder correspondence by:

a. Preparing letters of welcome to new stockholders for signature by the president.

b. Advising on the proper treatment of complaints.

c. Preparing letters of thanks for stockholders sending in proxies.

d. Preparing letters asking investors why they sold their shares.

e. Preparing special letters announcing exchange of shares, stock dividends, reduction of dividends, etc.

4. Plan and conduct annual stockholders' meeting by:

a. Planning and organizing program for the meeting.

b. Selecting the time and place the meeting will be held.

c. Advising company executives on how they should conduct themselves, what questions they should anticipate, etc., at the meeting.

d. Entertaining representatives of news media covering the meeting.

5. Conduct stockholder surveys to determine readership of annual report, the nature of the distribution of shares, etc.

6. Supervise the preparation of such stockholder publications as:

a. Quarterly newsletter.

b. House organ.

c. Dividend inserts.

d. Brochures in honor of special occasions or achievements.

e. Reprints of speeches and articles by company executives.

THIS list could be extended almost indefinitely depending upon how large and extensive a program a company desires. The preceding list will serve as a

beginning from which it can be expanded by each individual company.

In any stockholder relations program the importance of personal contact with stockholders cannot be overemphasized. Stockholder relations department people should make periodic visits to all available important stockholders, and as many of the others as possible. They should go on these visits armed with full information about the company and make it a policy to answer all questions on the stockholder's mind. When they return from such visits they should make a full written report to the president and other interested officers of the company. These reports can serve as a background on which to plan further stockholder meetings, annual reports, and to keep the principal officers advised of current thinking by stockholders.

Biographical sketches as complete as possible should be constantly maintained on large stockholders. They assist the officers of the company in their dealings with these individuals. Also, the stockholder relations department should maintain a stockholder card file that contains the record of every stockholder in the company.

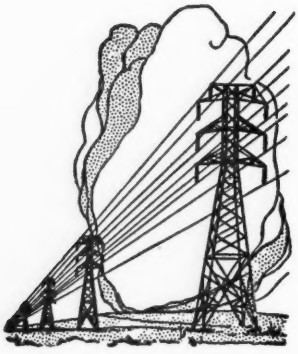
Stockholder relations are becoming increasingly important in the day-to-day affairs of every corporation in America. They cannot be profitably overlooked by any company.

The carefully developed and ambitious stockholder relations programs that are being carried on by thousands of corporations in the United States are the best evidence that they are profitable and important. Sound stockholder relations is sound business.

Human Values in Economic Development

"Too *often we hear that lack of capital is the principal obstacle to economic development. The experience which I and my associates in the [World] bank have had with this problem over the past years disproves this. We have found that the human factor—whether in government or in private enterprise—is a more important ingredient than is money. In private industry, in particular, the intelligence, vigor, and vision of management are often worth more than the most modern of buildings and machines. The very pace of current technological development of communication and transport, of marketing and advertising, calls for management both broader and deeper in its operations than ever before. Although there is widespread recognition in the less developed countries of the need for specific skills in industry—for the engineer, the chemist, the mechanic—what is less recognized is the even greater need for executive experience, for the men who can make sound policies, guide the enterprise as a whole, and direct the specialists. There must be the 'know-what' as well as the 'know-how.'"*

—Robert L. Garner,
President, International Finance Corporation.



Should Government Power Be Taxed?

This article presents interesting questions regarding the taxation of the Tennessee Valley Authority or payments in lieu of taxation and the untaxed distribution organizations.

By FRANKLIN H. COOK*

RECENTLY under the heading "Who Pays for TVA?" the following editorial (in part) appeared in *The Chattanooga Times*.[1]

An organization known as "America's Independent Electric Light and Power Companies" has a full-page advertisement in the *Saturday Review of Literature* showing a large picture of a TVA steam plant. Under the picture, the advertisement says: "Your taxes help build this federal government power plant. And that was just the beginning. Because this government-owned TVA steam plant doesn't pay a fair share of taxes, your taxes have to be higher to make up the difference."

Further down the ad says: "Federal power systems pay no federal taxes at all, and little or no state taxes."

The TVA doesn't pay income taxes because it belongs to the government, and all of its revenues belong to the government. As for "little or no state taxes" the TVA and its distributors pay more in lieu of state taxes than the private companies in the area paid before the advent of TVA.

It is the TVA customers and not the customers of the American independent electric light and power companies who are paying for TVA. As of July 1, 1954, the TVA customers through their power bills had already paid 40 per cent

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[1] Friday, August 3, 1956, p. 8, Chattanooga, Tennessee.

of the total construction cost of the TVA power facilities up to that time.

THE foregoing exposition on TVA is typical of the clash between the proponents of TVA and its critics. On the subject of TVA it seems that emotion, to some extent at least, dictates the reasoning on both the private power and the public power side, and that most of the public does not fully understand the facts.[2] The writer will not attempt a refutation or clarification of the editorial, but will permit the reader to evaluate its worth after analyzing the issue: Can and should consumers of government power pay federal taxes?

Although the ramifications of this proposition apply to all government power projects, in the mind of the public TVA represents public power; concretely then, the question is whether users of TVA electricity should pay federal taxes. Fortunately, material is available from which a deductive quantitative conclusion can be reached in respect to TVA energy.

AT the outset it is necessary to understand the TVA power distribution organization. The "America's Independent Electric Light and Power Companies" oversimplified the problem when it showed the picture of a steam plant and said that it did not pay its fair share of taxes. TVA is owned by the federal government; it produces electricity for sale at wholesale rates, the average selling price in 1953 being 4.40 mills per kilowatt-hour. It makes no retail sales to residential or rural users. In 1953 30 per cent of its output went to federal agencies, 22 per cent to industrial users, and 47 per cent to municipalities and co-operatives. In 1955 61 per cent of its output was taken by federal agencies. Thus, the present-day picture of TVA is similar to a captive power plant owned by the federal government that generates power for its own use, but sells a small percentage to outsiders.

(It is interesting to speculate about the political or financial problem that is crystallizing. Here we have a power system primarily supplying energy to the federal government. However, the nongovernment consumers are claiming an equity in the system by reason of the high rates that they have paid in the past. Suppose that the TVA management repays all of its capital investment to the U. S. government—then where is ownership and control?)

IN the organizational structure for the marketing of TVA power to nongovernment users, TVA sells its energy to municipalities and co-operatives. These municipalities and co-operatives are not part of TVA, but independent companies. They are similar to municipal plants and REA co-operatives in other sections of the country that purchase their power from privately owned electric companies. Also, they are like an independently owned company that purchases all of its energy for resale. The problem of taxing TVA may not be answered by saying that it should not be taxed because it belongs to the federal government. Only the generating aspect of TVA belongs to the federal government. The distribution facilities are financed by municipal groups and by private capital under the co-operative form of organization. In 1956 there were

[2] "An Engineer's View of TVA," by Herbert D. Vogel, *The Military Engineer*, 42:322, March-April, 1956, pp. 89, 90.

a total of 149 municipalities and co-operatives using TVA power: 98 municipalities and 51 co-operatives.

TVA, its municipalities, and co-operatives pay no federal taxes. Ordinarily, for the private power industry, the federal tax burden is greater than sums paid to local authorities. In 1953 from every dollar of operating revenue the purchasing company paid 6.9 cents in federal taxes; the steam, over twice the local burden, 15.3 cents; and the hydro, 16.3 cents.

To remove taxes as a source of irritation between the private power industry and public power advocates, one of two alternatives should be chosen: Because of their quasi-public character all public utilities, privately and publicly owned, should be tax exempt; or, all publicly and privately owned utilities should be equally taxed by the federal and state governments.

Since all local governments and the federal government need money, and the trend appears towards the need for greater tax sums quantitatively and a broadening of the tax base, with fewer and fewer tax exemptions, the proposition of tax exemption for all public utilities will not be examined.

However, taxation of federal power projects in competition with private power companies would be just and feasible. For example, at the present time TVA, through the use of multipurpose dams and the ability to take advantage of the latest technological advancements, has low production costs, running 36.6 per cent of a total selling price of 4.4 mills per kilowatt-hour, or 1.6 mills. This figure is considerably less than the 4-mill production cost for the steam companies and the two mills for the hydro companies in the same year. Private electric companies in Pennsylvania, Ohio, Arkansas, Virginia, Illinois, and other states are not only in competition among themselves for the location of industry within their area, but they must compete with TVA. They can stomach stiff competition resulting from technological efficiency of a competitor, but it seems decidedly unfair to give that competitor the advantage of a lighter tax load.

Legally, the subjection of TVA to federal taxes is within the constitutional power of the federal government. It can tax its own instrumentalities if it so desires,[3] so long as the tax is not discriminatory. But since most of TVA power goes to federal government agencies, a federal

[3] O'Malley *v.* Woodrough (1938) 307 US 277.

¶ "In *the organizational structure for the marketing of TVA power to nongovernment users, TVA sells its energy to municipalities and co-operatives. These municipalities and co-operatives are not part of TVA, but independent companies. They are similar to municipal plants and REA co-operatives in other sections of the country that purchase their power from privately owned electric companies. Also, they are like an independently owned company that purchases all of its energy for resale.*"

tax on municipalities and co-operatives that buy power from TVA might be better. Thus, the federal government would be taxing state agencies. This action is also legal, so long as it is not the type of tax that can only be levied upon a state.[4] A tax upon a municipally owned electric company would not be objectionable.

Economically, the addition of a federal tax to the electric bill of the average consumer of TVA power through a municipally or co-operatively owned plant would be practicable. Chart I (page 384) illustrates that the 1953 total tax per kilowatt-hour for the steam company was four mills, three mills for the hydro and purchasing companies, and one mill for TVA power users. The average selling price for the median purchasing company in 1953 was 2.7 cents per kilowatt-hour; 1.9 cents for the steam company; 1.3 cents for the hydro company; and 1.3 cents for the municipal-co-operative group using TVA power. The median for all municipalities was 1.34 cents; for all co-operatives, 1.57 cents. The addition of a federal tax of 6.9 per cent of average selling price, the equivalent paid by the purchasing company, would mean an addition of about one mill to the tax burden paid by the municipal-co-operative-TVA power user, increasing the median selling price to 1.4 cents per kilowatt-hour.

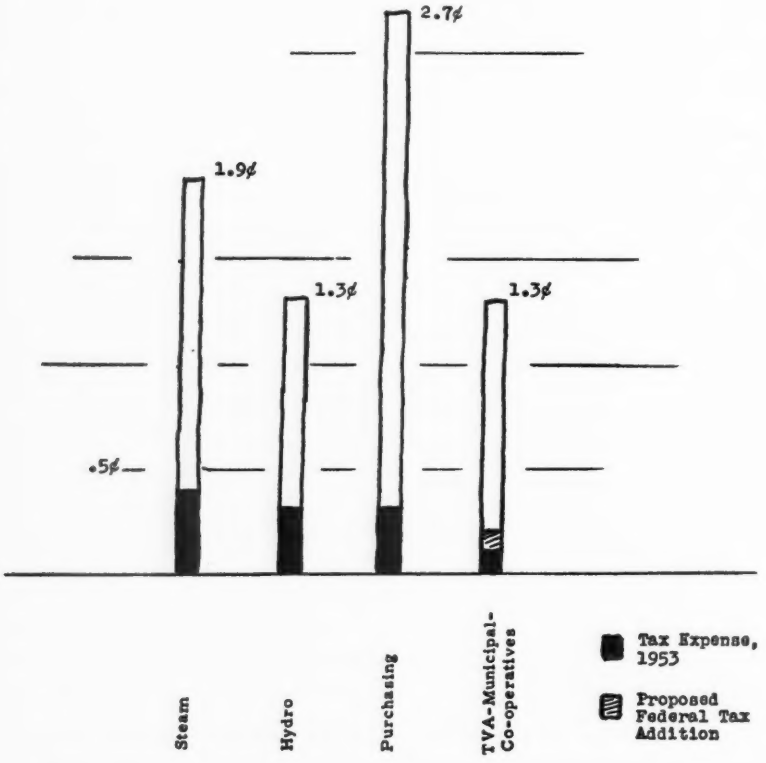
HOWEVER, such a rate increase would seem to be unnecessary because the municipal and co-operative systems could well afford this additional federal tax, for the net operating revenue of the median municipal-co-operative company was 18.6 per cent in 1953. In the same year the median net operating revenue for the purchasing company was 11.4 per cent after taxes. From its approximately 11.5 cents out of every dollar of operating revenue the private company had to pay interest to bondholders of seven mills, dividends to stockholders of six cents, leaving about five cents for reinvestment; whereas, the municipal-co-operatives had 15.5 cents for reinvestment after deducting 3.1 cents in interest expenses. Taking 6.9 cents from this 15.5 cents for federal taxation would allow the public power distributing companies 8.6 cents of every dollar of operating revenue for reinvestment or paying off of bonded indebtedness—over 50 per cent as much as the comparable privately owned company. Municipalities and co-operatives using TVA power are able to pay a federal tax!

FOR purposes of deductive reasoning medians have been used. A federal tax burden of one mill per kilowatt-hour is accrued to TVA-municipal-co-operative power in the economic analysis. This does not mean that under a proposed tax one mill will be added to each kilowatt-hour sold by every municipal or co-operative electric company using TVA power. It merely signifies that a tax burden somewhat proportionate to that borne by private purchasing companies would result if present federal income tax laws were applied to the public power companies. Some utilities would pay a higher tax than one mill per kilowatt-hour, others would have no tax. Undoubtedly, the co-operatives would have little, if any, tax, for in 1953 their net operating revenue was 11.8 per cent, but interest charges were 8.4 per cent, leaving only 3.8 per cent for reinvestment; whereas, for the munici-

[4] State of New York *v.* United States (1946) 326 US 572.

PROPORTION OF TAXES TO AVERAGE SELLING PRICE
PER KILOWATT-HOUR

CHART I



palities there was a net operating revenue of 23.7 per cent, and interest charges of only 1.9 per cent, giving them 21.8 per cent for paying off old plant or expansion. Constitutionally, the federal government possesses the power to tax the municipalities and the co-operatives. It need only reword the federal income tax law, perhaps changing the term "net profit" to "net income," taxing these companies on the same basis as privately owned utilities.

UNQUESTIONABLY, it would be unfair to tax the users of TVA power who secured that energy through a municipality or co-operative company and not place a like burden on the large industrial user who obtained his electricity directly from the TVA generating system. Therefore, Congress would have to have an ancillary

tax on sales to such nongovernmental consumers of power, or else transfer all of these large users to the customer list of some municipality or co-operative, thus avoiding the necessity of taxing TVA generating facilities.

But there is a policy question or two involved. Even though the municipal-co-operatives using TVA power can pay the federal tax, should not the rates be reduced rather than distribute the high earnings in taxes? Such a course of action would simply mean that the TVA consumer who is already getting the benefit of cheap power would not only escape federal taxation but would have an increase in his purchasing power by a further reduction in rates, and the consumers of privately owned electric companies would continue to have federal taxes added to the already higher costs of private companies.

THE conclusion that users of public power should pay federal taxes on the same basis as users of private power is based upon two premises: First, a sense of justness and fairness — undoubtedly, shared by the user of TVA power who today believes that he is paying his fair share of taxes—that all users of electric power should contribute to the support of the federal government according to a just application of the federal income tax laws.

Repayment of debt is not the same as the payment of taxes. But repayment of debt before due shows a fast accumulation of funds, indicating ability to pay taxes.

Secondly, to make comparison of rates with privately owned companies more accurate the inclusion of federal taxes would relieve a source of conflict and bring the data into focus. For example, since its creation TVA power has had the reputation of being the cheapest electricity in the United States. When TVA was created, rates in the United States were high. Speculators and financial wizards had put together utility systems for their own personal gain; thus encumbering companies with inefficient plants, overinflated values, watered stock, high costs.

SINCE 1937 plant values have been brought into line. Under strict prodding from the Securities and Exchange Commission, Federal Power Commission, local regulatory agencies, Edison Electric Institute, and self-analysis the private power industry has been moving forward in the sense of financial reorganization, increased output, technological improvements, all resulting in decreasing costs per kilowatt-hour sold. Consequently, fifteen years after its creation TVA is moving into an area on the charts where private power will be a yardstick for the measurement of TVA efficiency; this competition will increase in the future, for retardant elements in further TVA cost reductions are the use of the inefficient purchasing type of company in the distribution system, the lack of prodding from outside agencies, and the influx of politics into the municipal organizations.

In 1953 there were companies in the United States whose average selling price per kilowatt-hour sold was less than the median average selling price for the municipalities and co-operatives using TVA power.

The group included seven of the hydro companies that sold at 1.3 cents per kilowatt-hour or less, and two large steam

companies: Arkansas Power & Light Company, at 1.15 cents per kilowatt-hour, and Appalachian Electric Power Company, at 1.2 cents per kilowatt-hour. It may be significant that both of these companies adjoin TVA territory. The achievement of these power companies is more remarkable because the Arkansas Power & Light price includes a tax burden of 2.6 mills, Appalachian Electric Power, 2.4 mills, and TVA-municipal-co-operative, one mill.

ANOTHER problem of policy appears when the government may be using low electric rates to encourage the dispersion of industry for national defense purposes. For example, suppose that Congress votes money for a dam for purely irrigation and flood-control purposes. Prior to beginning construction, Congress decides to add generators to the dam and to sell electricity at a price that will induce industry to move to the area. Costs are ignored in the fixing of the selling price. Hypothetically, should the users of such energy pay a federal tax? The writer would answer in the affirmative, if they qualified under a federal income tax law taxing net income from public power projects. If under the law there was no taxable net income to be taxed, there would be no federal tax.

In summary, the TVA power distribution system is not a complete federally owned enterprise, where the Minnesota taxpayer feels that he has paid for the electric meter on the back porch of the Knoxville power user. It is a combination of federal capital, municipal ownership, and private investment through the co-operative form of business organization. The federal authority, the local municipalities, and the co-operatives pay no federal taxes. On the basis of its past performance the TVA generating part of the system under present accounting methods could presumably pay income taxes on the small amount of energy sold to nonfederal government users. From an analysis by medians the municipalities and co-operatives could pay federal income taxes.

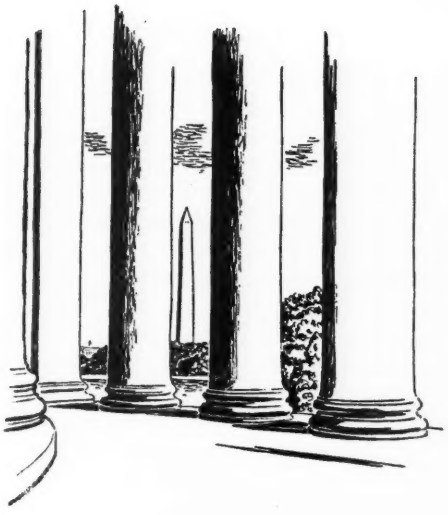
SINCE it is only fair that users of public power should pay their just share of federal taxes, and since the assumption of an equitable tax burden by public power projects would remove a source of irritation in competition with private power companies, the federal taxation of public power projects would appear to be feasible and desirable.

Increased Tax Take

"THE federal tax figures show a take of $75,113,000,000, which is an increase of about 13 per cent over fiscal 1955, or $8,824,000,000. The total includes old-age and survivors' insurance, unemployment insurance, railroad retirement taxes, and the like—the whole works. It is all taxes whether we think of it as such or not. The previous record tax year was fiscal 1954, when the take was $69,935,000,000. This mark has been bettered by more than $5 billion—a sum equal to the whole ordinary receipts and expenditures of the federal government a generation ago."

—EDITORIAL STATEMENT,
Los Angeles Times.

Washington and the Utilities



Compromise on Gas Bill

A SO-CALLED "tentative draft" of proposed legislation to ease the burden of FPC regulation of natural gas producers has been circulating in various quarters of the gas industry. It has also been reputed to be circulating, unofficially of course, within the Federal Power Commission.

Whether the proposed draft has succeeded in bringing about a general agreement among producers, distributors, and transmission divisions of the gas industry is at least debatable. That was one of the objectives—mainly to present a solid front for some legislation later on in this session of Congress. But industry agreement on a gas bill is one thing and congressional approval is quite another. Throughout February there was no indication among congressional leaders as to when a bill will actually be considered and who will sponsor it.

Offhand, the provisions of the so-called "tentative draft" would seem to represent quite a concession on the part of the producers to a continuation of FPC control. This is in sharp contrast with the outright exemption of independent producers which was attempted in the ill-fated Harris-Fulbright Bill which passed Congress last year but perished under a veto by President Eisenhower. Yet a Washington correspondent for the *St. Louis Post-Dispatch*—a newspaper very hostile to any form of relaxation of FPC controls—quotes one executive of a large distributing gas company as saying that the proposal was "worse than the Harris-Fulbright Bill." Needless to say, that distributing company, at least, will not go along with legislation in such form.

THE outstanding feature of the tentative draft, however, would seem to be an agreement that all FPC controls over independent producers would not be abolished. The manner in which such controls would be exercised would be spelled out in considerable detail. Under the proposal, the FPC would be obliged (not merely permitted) to use "fair field" price or some form of commodity price as a basis of producer regulation. The conventional cost formula, which the commission has traditionally used on other utilities subject to its jurisdiction, would be limited if not prohibited in determining rates

for producers. Also, certain types of escalation clauses, allowing small or predictable price rises, would be permitted. As a concession to distributors, however, the most favored nation and other more volatile forms of spiraling escalation provisions would be banned, or at least not permitted to operate without review and approval of the FPC.

The proposed legislation might have some effect in easing criticism of the industry brought about by the investigation of oil and gasoline price boosts and in creating a more congenial atmosphere in Congress by waiving, for the time being, the fight for complete freedom from federal regulation. Senator Kefauver (Democrat, Tennessee) developed another angle to this issue when he introduced a bill (S 1220) last month to exempt the small producers from FPC jurisdiction. This is not a new idea, of course, and is no more likely to be accepted by gas producers as a solution to their problem than it was in the last Congress. Kefauver's bill would limit FPC control to those producers whose operations exceeded 2 billion cubic feet a year at a given standard of production.

ALTHOUGH Kefauver's bill does not seem to stand much chance unless it happens to be incorporated as part of another measure, it does point to the great amount of minor gas-producing operations which have cluttered up the FPC regulatory picture ever since the Supreme Court decision in the Phillips case in 1954.

In 1956 the commissioners handed down over 4,000 orders and decisions of all kinds; in 1953, before they began overseeing the independent gas producers, the number was about 1,300. In 1956, the commission distributed over 800,000 copies of its reports, studies, and other documents, more than ten times its paper output of 1953. Gas rate applications have jumped more than fivefold in the same span. Last year companies challenging FPC jurisdiction filed 65 lawsuits against the agency, compared with two dozen suits in 1953.

And, of course, the FPC staff has not grown in proportion to the rapid acceleration of its work load. Today it numbers slightly more than 700 as against 612 in April, 1955. There are available funds for hiring an additional four or five dozen aides. But here the FPC runs up against the same problem that private industry is confronted with—finding competent personnel for specialized duties.

A COMMITTEE of mayors has been formed to fight legislation which would exempt natural gas producers from federal regulation, Mayor Frank P. Zeidler of Milwaukee announced recently. Mayor Robert F. Wagner, Jr., of New York was named chairman of the National Committee of Mayors, which represents a population of almost 16 million, Zeidler disclosed in a report.

The committee planned to enlist the support of governors and state attorneys "affected by price rises in natural gas," Zeidler said. Also sought by the group will be the support of state regulatory bodies and municipal law officers, he said. The Milwaukee mayor said Wagner headed a similar group two years ago which opposed gas and oil interests "seeking to escape price regulations by the Federal Power Commission." The new committee, said Zeidler, would act as a "continuing committee" from its previous activity and would be expanded.

Indecision on the Snake

THE administration's wavering attitude with respect to power develop-

ment on the lower Snake is building up fresh hope for the government ownership advocates of a federal high dam. Senate committee hearings on a bill (S 555) to authorize a federal dam in Hell's Canyon have been scheduled by the Senate Irrigation and Reclamation Subcommittee for March 6th to 8th. While there is little expectation that Congress will reverse the FPC and pass a Hell's Canyon bill as demanded by Oregon's Democratic Senators Morse and Neuberger, Interior Secretary Seaton's recent statement to the FPC that he wants to make further study of the feasibility of some kind of a high dam on the Snake is shaking the scenery. On another front, the National Hells Canyon Association has taken an appeal to the U. S. Supreme Court from a U. S. circuit court of appeals for the District of Columbia opinion upholding the FPC's issuance of a license to Idaho Power Company for construction of three dams on the Snake river, one of which is to be built in Hell's Canyon.

IN the light of the lower court action, first by three U. S. circuit court judges and then by the full court of nine, this plea for an appeal is expected to draw a blank in the highest court. Maybe, after the court has spoken, Secretary Seaton will, in turn, make himself more clear.

Seaton informed the FPC that he had ordered the Reclamation Bureau to make a detailed study to determine the feasibility of a multipurpose development of the Pleasant Valley site on the Snake. He did not say whether such a development should be a federal project. Nor did he request the FPC to hold up action on Pacific Northwest Power Company's application for a license to build two dams on this site. But he did say that preliminary studies had suggested the economic feasibility of a multipurpose dam at Pleasant Valley "to obtain flood control and power generation on a greater scale than envisaged" by Pacific Northwest Power's application. Senator Neuberger said "Seaton's action is clear-cut evidence that at least one of the three Idaho Power Company dams (the one at Hell's Canyon) is not the best possible development."

NOBODY expects that the administration will abandon its controversial power policy for the participation of local enterprise, including electric utility companies in construction and operation of such projects. A more reasonable explanation of the administration's stand on Snake river development may be its desire to counteract partisan criticism of alleged "giveaway" decisions and to create in the public's mind the idea that the administration is not committed to any specific formula for resource development.

It is noteworthy that Seaton did not rule out private company development of the Pleasant Valley site on the Snake river in his letter to the FPC. He suggested only that a better plan might be devised. The Secretary of Interior gave a further boost to the "partnership" policy in his year-end report on reclamation activities. Previously, he had also specifically endorsed the Trinity project in California on a "partnership" basis.

In his report Seaton noted that, with rising costs of irrigation projects, water users are finding it harder to pay for their share of new reclamation projects. This means that revenue from the sales of government-generated power must bear an increasing share of the cost of federal reclamation projects. "It is apparent," said Seaton, "that we must continue to look to power, even more in the future than in the past, as the paying partner of reclamation."

When Seaton recommended that pow-

er facilities of the Trinity river project be developed jointly by the federal government and Pacific Gas and Electric Company, he was responding to a request by Congress for an opinion on whether the project should be developed wholly by the federal government or with private utility help. "In my opinion," said Seaton, "it appears clear that joint development would provide substantially more funds for irrigation and multipurpose development."

Seaton said PG&E's proposal for installation of power facilities would convert the falling water of the Trinity development into a "substantial asset" that would mean a surplus of $165 million in project revenues in fifty years of operations. To get such a surplus from federal operation, Seaton said Central Valley project power rates would have to be increased 20 per cent. Another factor in favor of joint development is that there would be a reduction of $55.5 million in the government's initial capital investment, which the utility company would assume. This is the first specific endorsement of a definite partnership project by Secretary Seaton.

Atom Plant Progress

THE congressional Joint Committee on Atomic Energy began its statutory hearings regarding the development, growth, and status of the atomic energy industry during the latter part of February. AEC Chairman Strauss reported encouraging progress in atomic industrial development, noting that 21 companies are either presently building or have orders to build civilian research or power reactors.

Commissioner Murray, in a written statement released after Strauss' testimony, said that civilian atomic energy programs are "not adequate." Murray praised the contribution of private industry, but said that industry cannot be expected to finance the necessary time schedule. He said the federal government cannot limit its work to theory and the development of small prototype reactors.

When he was questioned about responses to the AEC's latest offer to private industry to help in the design and development of atomic power plants, Strauss pointed out that five or six will be producing power this year and that 18 are under construction and will be completed by 1962. He revealed three new proposals which the AEC has just received. The proposals are from American Gas & Electric Service Corporation, acting for a group of utilities in Indiana, Ohio, Pennsylvania, and Kentucky which want to build a 13,000-kilowatt plant by 1962 and to start work on a 200,000-kilowatt plant; Pacific Power & Light Company, in association with Washington Water Power Company, Montana Power Company, and Portland General Electric Company, wants to build a nuclear power plant near the AEC's Hanford, Washington, plant; and Pacific Gas and Electric Company has advised the AEC that it wants to build a "large-scale" plant.

ON February 21st the committee heard charges by the American Public Power Association that the AEC is "freezing out" publicly and co-operatively owned utilities from nuclear power development. Association President Samuel B. Morris of Los Angeles told the committee that terms of the AEC's third round of invitations for private power reactor proposals stimulates the formation of large private utility combinations to sponsor nuclear power projects.

Telephone and Telegraph

AT&T Head Sees Need for Higher Rates

TELEPHONE rates will have to be raised if the industry is to obtain the necessary new capital to keep up with an unprecedented growth. The warning came from Frederick R. Kappel, president of American Telephone and Telegraph Company, in an annual report to the company's stockholders.

The report showed that earnings of the Bell system in 1956 were equal to $13.16 a share of AT&T stock, compared with $13.10 in 1955. This slight increase, earned on a greater number of shares than in 1955, is not enough to sustain required system growth, Kappel said. In his letter to stockholders, Kappel stated:

> Expenses, including wages, have continued to rise and the higher cost of doing business must be met by further increases in rates. Earnings above the present level are needed to assure successful financing, fair treatment of share owners, and improved service.

Kappel promised that Bell system companies "will vigorously pursue" rate increases in many states.

Bell system earnings on total capital were 6.8 per cent, the same as in 1955. A gain of $1,726,929,250 in assets during the year pushed total assets of the Bell system to $16,206,571,233, believed to be the highest level ever reached in corporate history. The Bell system spent more than $2.2 billion for construction last year and will need to spend more in 1957, Kappel reported.

"Right now, in common with all other business, we are experiencing higher costs of operation, including higher wage costs," Kappel said. "We cannot escape this, for we must have able people and pay to get them. We have continuously better equipment and operating methods. But the costs that arise from inflation are much greater than these savings."

Some of the high lights of the report were: the addition of 3,227,000 telephones to the Bell system last year—almost as many as the record gain in 1946; a 10 per cent increase in long-distance conversations; an increase of almost 50 per cent in calls to and from Great Britain, since the opening of the transatlantic telephone cable; direct dial service for some 11 million customers to nearby cities and towns. Some 2.7 million customers can now dial as many as 20 million other telephones all over the nation.

KAPPEL noted that share owners last year received valuable rights which

entitled them to subscribe for one new share at par, $100 a share, for each ten shares held. Some 5,715,000 shares, 99.8 per cent of those offered, were purchased. More than half the share owners used their rights to buy stock and bought more than two-thirds of the issue.

"The average market value of the rights was $6.93," Kappel said. "This is the eighth time since 1946 that our share owners have had rights to subscribe to new securities. The market value of such rights for each share has totaled about $22."

In 1956, the Bell system added 41,000 employees, for a total of 787,000. More than 115,000 of these employees have been with the Bell system twenty-five years or more. Some 345,000 have served less than five years.

"But whether they are old or young in experience, the part they take in their communities, and their skills and spirit and understanding of what telephone users expect of them, are the greatest asset we have," Kappel stated.

The AT&T president also cited new telephone services under development. These included: (1) a home communicating system that will provide new convenience in answering calls, talking from room to room, or talking from any telephone with a caller at the door; (2) a dial system for small businesses that will automatically connect incoming calls to a busy telephone as soon as the line is free; (3) a new telephone of a design especially suited for use in bedrooms; (4) a method for sending several conversations at the same time over local wires, and new microwave radio relay systems.

*

Bills in Congress

THE independent telephone industry is justifiably worried over moves in Congress to eliminate the exemption of operators at small telephone exchanges from the provisions of the Fair Labor Standards Act. Under the present law, the wages of operators at telephone exchanges having 750 stations or less are exempt from the provisions of the act.

Hearings will begin on March 1st before a subcommittee of the House Education and Labor Committee, headed by Representative Augustine B. Kelley (Democrat, Pennsylvania). Up for consideration will be Kelley's own bill, HR 4575, to remove the exemption. Other bills introduced in the House to repeal the exemption are HR 2879, by Representative Miller (Democrat, California), and HR 4696, by Representative Roosevelt (Democrat, California).

In the Senate, Senator Morse (Democrat, Oregon) has introduced a repeal bill, S 1178. A similar bill, S 1272, has been introduced by Senator McNamara (Democrat, Michigan), supported by Morse, and Senator Murray (Democrat, Montana).

* * * *

BOTH the Bell system and the independent telephone industry will be watching with interest a bill recently introduced in the House by Representative Hiestand (Republican, California). Hiestand's measure, HR 4781, would change the interest rate charged for REA loans to rural electric and telephone co-operatives. The industry has long complained that the present fixed interest rate of 2 per cent is unrealistic—a view shared by President Eisenhower in his Budget message to Congress suggesting more flexible interest rates on government loans.

Hiestand's bill provides that REA set the same rate of interest on loans to co-ops that the U. S. Treasury must pay for borrowed funds.

Senator Langer (Republican, North Dakota) has introduced a bill, S 663, to repeal the excise taxes on communication and transportation services.

Telephone Topics

KOYO DENKI KENKYUJO (Koyo Electrical Machinery Laboratory), No. 412, Kami-Ochiai, 1-chome, Shinjuku-ku, Tokyo, has just completed a new "Call Phone." This device renders the voice of the speaker over the phone audible to the person called, even before he takes up the receiver, so that others in the phone's vicinity will not waste time picking up a call for someone else. The appliance can easily be fixed to any telephone. When the person called picks up the receiver, the speaker's circuit will automatically be cut off, so that the person called can begin talking at once, with no interruption. The makers believe this device is of great practical value in a business office where many people are working close together.

* * * *

Interior Department engineers have developed a portable lightweight telephone for use in coal mine rescue operations. The Bureau of Mines has tested the new telephone in its experimental coal mine at Bruceton, Pennsylvania, and in rescue operations after two actual explosion and fire disasters in commercial mines, the department said. The new telephone, built with hearing-aid parts, was found safe for use in gassy mines.

* * * *

Hollywood cartoonist Walt Disney recently conjured up a world of talking cuff links and shirt buttons for the overseas audience of the Voice of America. Interviewed in Washington, D. C., February 3rd, he predicted the day will come when portable broadcast receivers "may be worn as today a shirt button or cuff link is worn." If such comes to pass, Disney will probably not overlook the animated cartoon possibilities of Mickey Mouse or Donald Duck crawling under the bed searching for a missing telephone.

* * * *

About 100,000 car owners in West Germany will soon be able to have telephones in their autos, the Bonn government has recently announced. The announcement said the Postal Ministry also plans to set up a radio service enabling a driver to be summoned to the nearest telephone by a bell clanging in his car.

* * * *

A NEW wrinkle — insurance-by-telephone—is being successfully tried by a credit union organized mutual insurance company in the Dallas, Texas, area. Members Mutual Insurance Company was set up by credit union members in 1952 with $250,000 capital. It services credit union members in 19 Texas cities. "Insurance-by-telephone" was launched by the company in 1955. Members may telephone Enterprise 2323 at Dallas (a collect number) and request either an automobile or a fire insurance policy. More than 100 policies a month are being issued.

* * * *

FCC Chairman George C. McConnaughey says he has reached no decision on whether to retire when his present term expires June 20, 1957. There have been recurring reports that McConnaughey will not seek reappointment. McConnaughey has been with the FCC since 1954 when he was named by President Eisenhower for a recess appointment to complete the term of Commissioner George Sterling.

Financial News and Comment

By OWEN ELY

Book Value Ratios

WALTER HERRMAN, vice president of Southern California Gas Company, has made an extensive study of (1) the ratio of market price to book value, and (2) the percentage of earnings on common stock equity, for practically all electric and gas utilities as of December, 1956. The detailed table is too long to reproduce here, but it is interesting to note that the average ratio of market price to book value for natural gas distribution companies (1.66) and for electric utilities (1.62) is very much the same, while the ratio for gas pipeline companies (2.38) is substantially higher. The percentage earned on book value is moderately higher for natural gas companies (13.2) than for electric companies (11.5) but for gas pipelines the figure (16) is substantially higher.

The detailed tables for gas and electric stocks are arranged by states (with averages for each state) except for those companies which operate in more than one state—principally the pipelines and integrated utilities. The percentage earned on book value differs widely between different states and companies. For example, Pacific Lighting earned only 9.41 per cent while Indiana Gas & Water earned 17.19 per cent, Minneapolis Gas 19.37 per cent, West Ohio Gas 21.10 per cent, and Houston Natural Gas 25.10 per cent. In the electric list California and the New England utilities run well below the average of 11.47 per cent for 133 companies. Southern California Edison earned 8.68 per cent and the three other California utilities were between 9 and 10 per cent, making an average for the state of 9.41 per cent, which was nearly one-fifth below the U. S. average.

Massachusetts, Maine, and New Hampshire were also well below the U. S. figure, the state averages being 8.83, 8.81, and 9.26 per cent, respectively. If Eastern Utilities Associates should be omitted from the Massachusetts list the average would drop to 8.27; the important Boston Edison had a return of only 7.04.

DEPARTMENT INDEX

	Page
Book Value Ratios	394
The Outlook for Electric Utilities	395
Charts—Electric Utility Trends and Forecasts	396, 398
Consolidated Edison's Convertible Debentures	399
Tables—Financial Data on Gas, Telephone, Transit, and Water Stocks	400, 401, 402

New York was also on the low side with an average of 9.23.

THE percentages earned on book value are interesting for comparative purposes, but otherwise may not be of great significance, because they reflect so many variables. Book value is an historical composite of all the offerings of common stock during the company's history, possibly at widely varying prices, as reflected in capital surplus; it also reflects (through earned surplus) the whole history of retained earnings which in turn is governed by rates and regulations, operating efficiency, dividend pay-out policy, capital leverage, etc.

Naturally we would expect to find growth companies earning a higher percentage on book value, and this is exemplified by the average of 12.82 per cent for Florida utilities and 15.35 for Texas utilities, as compared with the low figures cited above for California and New England where stringent regulatory policies in the past have held earnings to below-normal levels. Also in the so-called "fair value" states, such as Ohio and Pennsylvania, the ratios are well above the U. S. average—Cincinnati G&E with 16.17 per cent and Pennsylvania P&L with 15.66 per cent are outstanding.

The Outlook for Electric Utilities

FISCHER S. BLACK recently gave his annual discussion and forecast of trends in the electric utility industry before the New York Society of Security Analysts, which are summarized as follows. The accompanying charts were redrawn from slides used by the speaker to illustrate his projections. (See pages 396 and 398.)

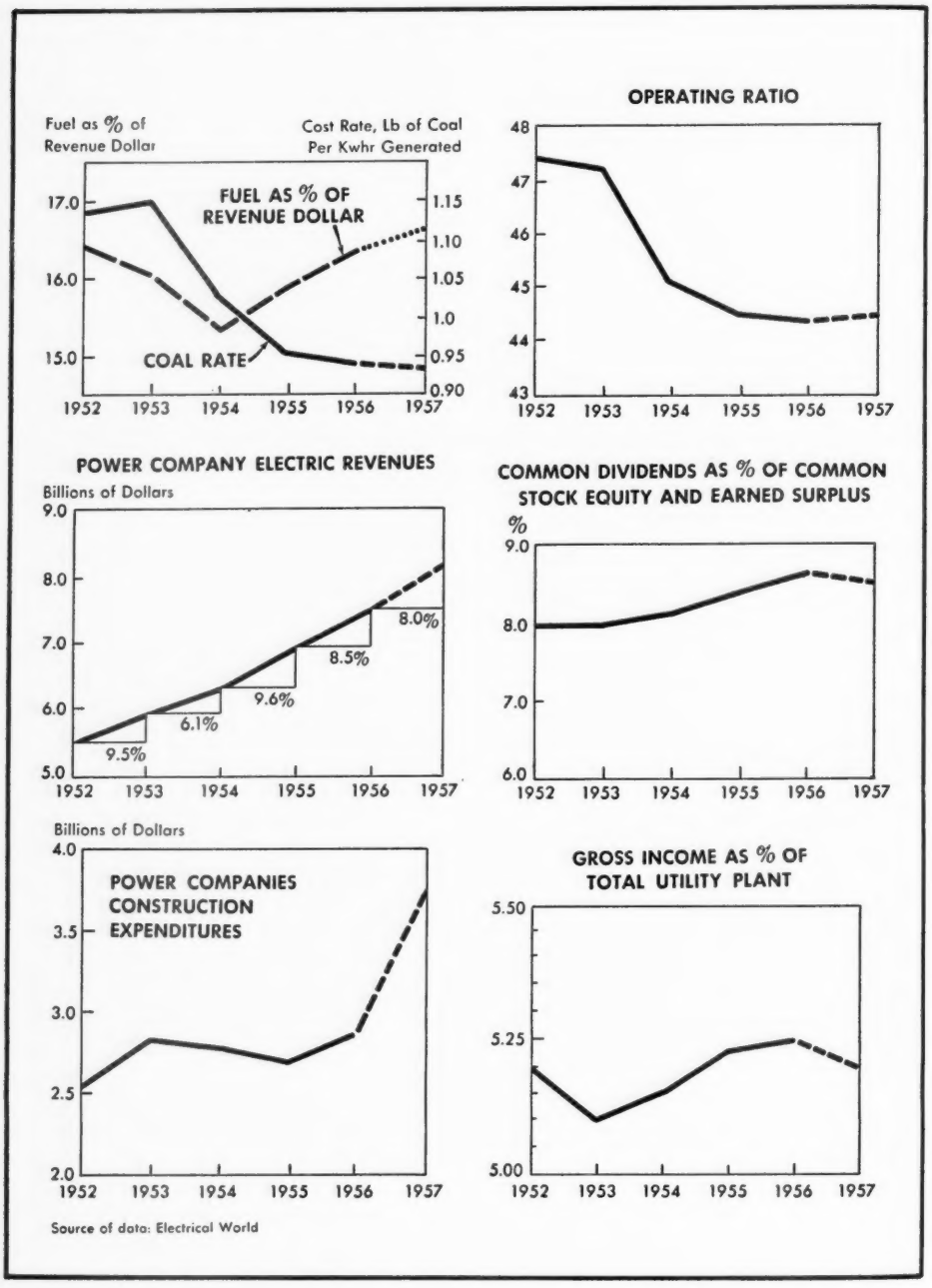
As an answer to those who fear the effects of inflation on the industry, he pointed out that over the past fifteen years the electric utilities have shown a 33 per cent increase in productivity in the use of coal, a 25 per cent increase due to larger generating units, and a 20 per cent increase due to improvement in the load factor. On an over-all basis efficiency is thus about three times as great now as it was fifteen years ago.

More recently investors have worried about higher interest rates and the increasing cost of money to the utilities. But as an offset, he pointed out, there are continuing economies in operation. Thus while output went up 10 per cent last year, the number of employees increased only 1 per cent, the amount of fuel burned only 7 per cent, and maintenance costs only 5 per cent. Revenues were up 9 per cent (with practically no benefit from rate increases) and expenses increased by the same amount. Stockholders received 7 per cent more in dividends.

REGARDING further gains in the use of electricity, he pointed out that electric space heating and cooling is a promotion program which is still in its infancy, while usage gains in stores, office buildings, and factories continue to accelerate. He made the following predictions for the *entire* electric utility industry in 1957:

Construction expenditures are expected to hit a record high of $4.8 billion *versus* $3.8 billion last year. With these expenditures the industry should add about 9.4 million kilowatt capacity compared with last year's 7.3 million, which was less than anticipated due to the prolonged Westinghouse Electric strike. About 1.2 million new customers should be added during the year, bringing the total to 55.2 million. Revenues should gain 9 per cent again, bringing the total to $8.7 billion.

Excluding government projects, the projections work out as follows: Private power companies should spend $3.8 billion


Fuel as % of Revenue Dollar
Cost Rate, Lb of Coal Per Kwhr Generated
FUEL AS % OF REVENUE DOLLAR
COAL RATE
17.0
16.0
15.0
1.15
1.10
1.05
1.0
0.95
0.90
1952 1953 1954 1955 1956 1957
OPERATING RATIO
48
47
46
45
44
43
1952 1953 1954 1955 1956 1957
POWER COMPANY ELECTRIC REVENUES
Billions of Dollars
9.0
8.0
7.0
6.0
5.0
9.5%
6.1%
9.6%
8.5%
8.0%
1952 1953 1954 1955 1956 1957
COMMON DIVIDENDS AS % OF COMMON STOCK EQUITY AND EARNED SURPLUS
%
9.0
8.0
7.0
6.0
1952 1953 1954 1955 1956 1957
Billions of Dollars
POWER COMPANIES CONSTRUCTION EXPENDITURES
4.0
3.5
3.0
2.5
2.0
1952 1953 1954 1955 1956 1957
GROSS INCOME AS % OF TOTAL UTILITY PLANT
5.50
5.25
5.00
1952 1953 1954 1955 1956 1957
Source of data: Electrical World

this year (*versus* $2.9 billion last year) bringing utility plant up to $40 billion at the end of the year. Revenues this year should rise from $7.5 billion to $8.15 billion. Net income should increase 7½ per cent to $1.46 billion.

The speaker predicted that the Federal Reserve Board index would average 148 this year compared with 143 in 1956—this was used as a basis for forecasting industrial power sales. Total kilowatt-hour sales are expected to increase 8.3 per cent this year to 573 billion kilowatt-hours. Industrial sales in 1956 reached 59 billion kilowatt-hours, considerably higher than predicted a year ago because of larger sales to the AEC; this year they should increase about 19 billion kilowatt-hours or 7 per cent, with sales to the AEC leveling off around 60 million kilowatt-hours.

RESIDENTIAL sales were about 4 per cent less than forecast last year owing to weather conditions, which are now becoming an important factor due to air conditioning. Assuming normal weather this year, he estimated that residential sales would go up 12.5 per cent, bringing them up to 150 billion kilowatt-hours. The reason for this rather substantial gain would be threefold—the weather factor, the anticipated addition of over one million residential customers, and a substantial gain in residential usage based on record sales of appliances in 1956 amounting to $8.4 billion. This year residential usage should increase by 260 kilowatt-hours, compared with last year's gain of 229 kilowatt-hours—making up the amount lost due to weather. In further support of this forecast he predicted an increase in disposable personal income to $289 billion this year compared with $281 billion last year.

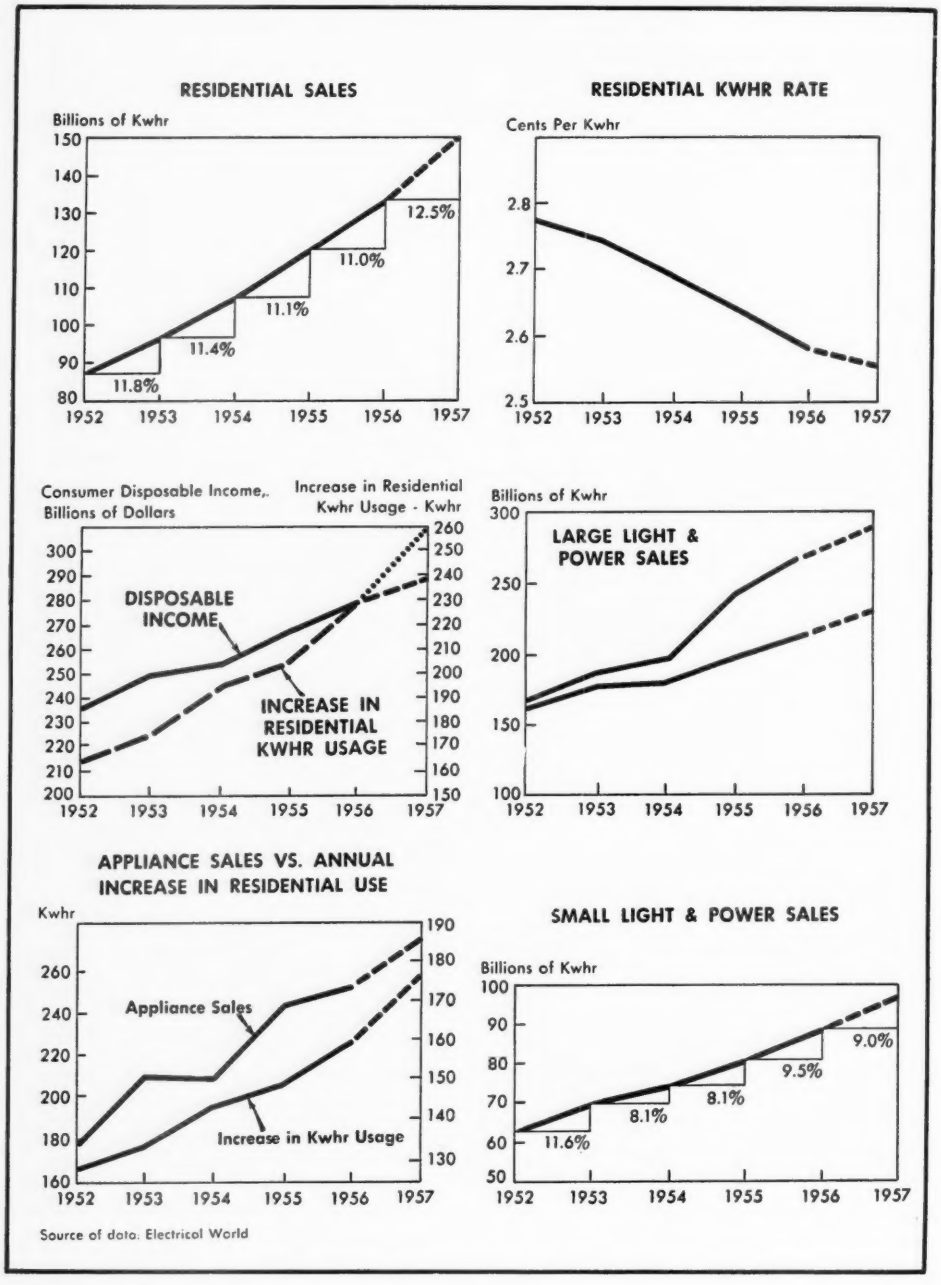
Taking a more detailed look at appliance sales, he pointed out that air-conditioning sales jumped 39 per cent last year. Sales of electric blankets (a good load builder) were up 34 per cent. Automatic coffee makers gained 39 per cent, dehumidifiers 187 per cent, dish washers 36 per cent, inside fans 34 per cent and window fans 54 per cent, and portable food mixers 63 per cent. On the other hand, sales of water heaters, electric ranges, and refrigerators declined last year and he did not expect them to make any substantial recovery this year due to the decline in residential building. On an over-all basis, the sales index for appliances should rise to 186 per cent this year compared with 174 per cent last year.

OPTIMISM was expressed regarding the future of the heat pump, and there was criticism of some utility managements which have shown no enthusiasm for promoting their use. Lack of local servicing agencies is also a handicap. However, he thought that within a decade 30 per cent of new homes would use heat pumps and later as much as 50 per cent. He emphasized that the heat pump is inefficient only about 10 per cent of the time—on the coldest winter days.

The average residential rate is expected to decline about .02 cents in 1957 to 2.57 cents, but the decrease may be somewhat slower in future.

Turning to an analysis of expenses in 1956-57: Taxes took a somewhat smaller "bite" (23.8 per cent of revenues) than anticipated due to the liberalized depreciation provisions of the 1954 Revenue Act and the fact that more of the utility companies have been taking advantage of these provisions. However, with costs of fuel jumping, the operating ratio went to 44.4 per cent and may creep higher to 44.5 per cent this year. While the number of pounds of coal per kilowatt-hour generated hit a new low last year of .94 pound, this was more than offset by the higher price of fuel.

Fuel costs may rise to 16.7 per cent of


RESIDENTIAL SALES
Billions of Kwhr
150
140
130
120
110
100
90
80
11.8%
11.4%
11.1%
11.0%
12.5%
1952
1953
1954
1955
1956
1957
RESIDENTIAL KWHR RATE
Cents Per Kwhr
2.8
2.7
2.6
2.5
1952
1953
1954
1955
1956
1957
Consumer Disposable Income, Billions of Dollars
Increase in Residential Kwhr Usage - Kwhr
300
290
280
270
260
250
240
230
220
210
200
260
250
240
230
220
210
200
190
180
170
160
150
DISPOSABLE INCOME
INCREASE IN RESIDENTIAL KWHR USAGE
1952
1953
1954
1955
1956
1957
Billions of Kwhr
LARGE LIGHT & POWER SALES
300
250
200
150
100
1952
1953
1954
1955
1956
1957
APPLIANCE SALES VS. ANNUAL INCREASE IN RESIDENTIAL USE
Kwhr
260
240
220
200
180
160
190
180
170
160
150
140
130
Appliance Sales
Increase in Kwhr Usage
1952
1953
1954
1955
1956
1957
SMALL LIGHT & POWER SALES
Billions of Kwhr
100
90
80
70
60
50
11.6%
8.1%
8.1%
9.5%
9.0%
1952
1953
1954
1955
1956
1957
Source of data: Electrical World

the revenue dollar in 1957. However, higher fuel costs may eventually be recouped (to the extent not offset by fuel adjustment clauses) by rate increases. At the end of the year there were pending 11 applications for rate increases, involving $26 million. This was twice the number and three times the dollar amount of increases approved during the year 1956. (In this connection it may be added that Southern California Edison recently raised its rate increase application from $13 million to $34 million.)

REGARDING earnings on the investment in utility plant, last year this hit a high of 5.25 per cent but this year may recede slightly to 5.2 per cent. The ratio of common dividends to common stock equity (including earned surplus) has been rising consistently, reaching 8.7 per cent last year, but may drop slightly to 8.6 per cent this year.

Construction expenditures of the investor-owned utilities reached a record high of $2.9 billion last year—slightly higher than in 1953—and they are expected to jump to $3.8 billion this year.

Referring to the inroads of public power, no significant change is anticipated over the next three years. In 1955 privately owned capacity was 75.9 per cent of the U. S. total. This year it may drop to 75.4 per cent but in 1959 it should be up to 76 per cent.

MANY analysts are interested in growth electric utilities. The two leaders with respect to 1957 increases in generating capacity are Idaho Power, with an anticipated increase of 158 per cent, and Southern Nevada Power, with 136 per cent.

Regarding the factors to study in the period ahead, he offered the following advice to analysts and investors:

1. Watch the amount of reserve capacity, since in any economic recession those that are short of capacity might fare better.

2. Any utilities which have been earning a relatively high rate of return do not have so much occasion for worry now, since high interest rates should be recognized as a factor in rate of return by regulatory authorities.

3. Share earnings this year will be benefited by increases in the bookkeeping credit for interest during construction, since the amount of construction will be at a record high level.

4. Load factors are not a concern, where companies with present rates have shown good earnings growth.

5. Electric companies with good area development programs should be watched since this will bring new business into their territories.

6. Companies that are promoting electric house heating should also be watched, as "they may fool the pessimists."

Consolidated Edison Convertible Debentures

COMMON stockholders of Consolidated Edison of New York of record February 25th were offered the right to subscribe to $100 debentures at par for each 25 common shares held, making 250 rights per $1,000 bond. The offering is underwritten. The bonds will be convertible after June 1, 1957, at 45.45. At the recent price of $44 for the shares, the stock yields 5.45 per cent based on the $2.40 dividend. *Pro forma* interest requirements before income taxes were covered about 4.4 times in 1956.

H. R. Searing, chairman of the board, at the special meeting of stockholders which approved issuance of the debentures, pointed out that in the postwar period the company spent about $900 mil-

lion for construction, of which some 56 per cent came from internal cash and 44 per cent from issuance of debt—mainly mortgage bonds. This has resulted in increasing the debt ratio from 37 per cent to 50 per cent, which is slightly below that of the industry as a whole.

During the next five years—1957 through 1961—the company will need at least $650 million more and the company decided that an issue of convertible debentures would be logical at this time. Mr. Searing stated:

> Convertible debentures are a well-accepted medium for the indirect sale of common stock and have two important advantages over the direct sale of shares. In the first place, assuming a conversion price near the market, convertible debentures provide a means of raising equity capital at a better price per share than the direct sale of common stock. Or, put another way, fewer shares of common stock have to be issued for the amount of money raised.

In the second place, the shares of common stock are not all issued at once, because the debenture holders do not all convert at once. Actually, the conversion of the debentures extends over a considerable period of time and occurs as the market price of the stock advances. If the price advance is based upon higher earnings—and this is usually the case—the adverse effect of the increased number of shares on the amount of earnings per share is likely to be minimized.

Furthermore, convertible debentures are attractive to certain types of investors, principally institutions which, for one reason or another, are not buyers of the company's mortgage bonds or its common stock, and so a new class of investors for company securities is reached.

RECENT FINANCIAL DATA ON GAS UTILITY STOCKS

Rev. (Mill.)			*2/20/57 Price About*	*Dividend Rate*	*Approx. Yield*	*Recent Share Earns.*	*% Increase*	*Aver. Incr. In Sh. Earns. 1951-55*	*Price-Earns. Ratio*	*Div. Payout*	*Approx. Common Stock Equity*
		Pipelines									
$ 4	O	Ala.-Tenn. Nat. Gas	19	$1.20	6.3%	$1.45Se	13%	17	13.1	83%	37%
15	O	Commonwealth N. G. ...	31	1.60	5.2	2.72Se	7	X	11.4	59	37
16	O	E. Tenn. Nat. Gas	9½	.60	6.3	.83De	30	X	11.4	72	19
48	S	Miss. River Fuel	35	1.60	4.6	2.17Se	16	6	16.1	74	52
69	S	Southern Nat. Gas	40	2.00	5.0	2.70Se	25	3	14.8	74	33
200	O	Tenn. Gas Trans.	30	1.40	4.7	1.91Se	21	17	15.7	73	22
175	O	Texas East. Trans.	25	1.40	5.6	2.05De	D3	5	12.2	68	26
71	O	Texas Gas Trans.	23	1.00	4.3	2.17De	25	D	10.6	46	27
75	O	Transcont. Gas P. L. ...	18¼	1.00	5.4	1.28Se	18	17	14.5	78	19
		Averages			5.3%				13.3	69%	
		Integrated Companies									
127	S	American Nat. Gas	60	$2.60	4.3%	$4.50N	NC	8	13.3	58%	35%
50	A	Arkansas-Louis. Gas ...	24	1.20j	5.0	1.50Oc	NC	10	16.0	80	53
44	O	Colo. Interstate Gas	70	1.25	1.8	5.28Se	NC	45	13.3	24	35
343	S	Columbia Gas System ..	17	1.00	5.9	1.44De	33%	3	11.8	70	43
8	O	Commonwealth Gas	7	.10	1.4	.26#	D51	D	—	38	72
12	A	Consol. Gas Util.	16	.90	5.6	1.62De	53	D	9.9	56	61
240	S	Consol. Nat. Gas	40	1.90	4.8	3.26Se	21	O	15.3	58	70
178	S	El Paso Nat. Gas	31	1.30	4.2	2.12N	48	O	15.1	61	22
40	S	Equitable Gas	31	1.60	5.2	2.31De	14	4	13.4	69	32
15	O	Kansas-Nebr. Nat. Gas ..	36	1.65	4.6	2.63Se	30	3	13.7	63	32
88	S	Lone Star Gas	34	1.80	5.3	2.35Se	11	5	14.5	77	39
23	S	Montana-Dakota Util. ..	27	1.00	3.7	1.51Se	11	25	17.9	66	30

21	O	Mountain Fuel Supply ...	25	1.20	4.8	1.65Se	9	8	15.2	73	59
72	S	National Fuel Gas	19	1.10	5.8	1.66Se	6	8	11.4	66	58
108	S	Northern Nat. Gas	52	2.20	4.2	3.50Se	11	26	14.3	63	34
43	S	Oklahoma Nat. Gas	27	1.50	5.6	1.98De	D2	6	13.6	76	29
99	S	Panhandle E. P. L.	51	1.50	2.9	2.50#	18	16	20.4	60	32
11	O	Pennsylvania Gas	23	1.00	4.3	1.63#	D10	D	14.1	61	68
159	S	Peoples G. L. & Coke ...	182	8.00	4.4	12.86Se	18	6	14.2	62	40
31	O	Southern Union Gas	26	1.12	4.3	1.69#	28	15	15.4	66	34
273	S	United Gas Corp.	33	1.50	4.5	2.28De	12	7	14.4	66	43
		Averages			4.4%				14.3	66%	
		Retail Distributors									
28	A	Alabama Gas	30	$1.60	5.3%	$2.36De	8%	31	12.7	68%	42%
44	O	Atlantic Gas Light	31	1.60	5.2	2.75Se	23	2	11.3	58	33
5	O	Berkshire Gas	16	.90	5.6	1.34Au	111	46	11.9	67	37
4	O	Bridgeport Gas	29	1.50	5.2	2.57Se	22	48**	11.3	58	44
4	O	Brockton-Taunton Gas ..	17	.90	5.3	.85#	30	42	20.0	106	36
55	S	Brooklyn Union Gas	35	2.00	5.7	2.83De	5	5	12.4	71	47
1	O	Cascade Nat. Gas	10	—	—	Def.#	—	—	—	—	41
33	O	Central El. & Gas	16	.90	5.6	1.67Se	28	9	9.6	54	17
11	O	Central Indiana Gas	14	.80	5.7	1.08Se	13	D	13.0	74	64
5	O	Chattanooga Gas	5	.30	6.0	.47Au	38	14	10.6	64	45
66	O	Gas Service	25	1.36	5.4	2.26Se	23	O	11.1	60	41
6	O	Hartford Gas	37	2.00	5.4	2.50Ma	15	D	14.8	80	52
2	O	Haverhill Gas	20	1.20	6.0	1.91De	46	14	10.5	63	57
31	O	Houston Nat. Gas	37	1.50	4.1	2.26Jy	24	6	16.4	66	22
17	O	Indiana G. & Water	20	1.00(k)	5.0	1.55De	8	9	12.9	65	45
45	S	Laclede Gas	15	.80	5.3	1.21Se	25	2	12.4	66	34
4	O	Michigan Gas Utils.	21	1.00	4.8	1.31#	5	14	16.0	76	43
4	O	Midsouth Gas	13	.60	4.6	.72#	71	D	18.1	83	34
37	O	Minneapolis Gas	27	1.40	5.2	2.27Se	43	10	11.9	62	38
14	O	Miss. Valley Gas	19	1.12	5.9	1.92Se	14	—	9.9	58	28
5	O	Mobile Gas Service	22	1.00	4.5	1.23Se	D20	D	17.9	81	33
7	O	New Haven Gas	30	1.60	5.3	2.39#	7	17	12.6	67	63
12	O	New Jersey Nat. Gas ...	25	1.20(i)	4.8	2.23De	17	—	11.2	54	32
80	O	No. Illinois Gas	18	.88	4.9	1.44De	17	—	12.5	61	46
8	O	North Penn Gas	14	1.00	7.1	.83#	D33	1	16.9	120	57
6	O	North Shore Gas	16	.80	5.0	1.16De	23	6	13.8	69	54
183	S	Pacific Lighting	36	2.00	5.6	2.84De	5	33	12.7	70	44
15	O	Pioneer Nat. Gas.	28	1.32	4.7	1.89Je	NC	19	14.8	72	53
13	O	Portland Gas & Coke ..	34	1.00	2.9	2.38De	6	9	14.3	42	36
2	O	Portland Gas Light	10	.75	7.5	1.22#	13	—	8.2	61	25
8	A	Providence Gas	9½	.56	5.9	.59#	16	16	16.1	95	64
3	A	Rio Grande Valley Gas ..	3	.15	5.0	.26Je	—	9	11.5	58	63
3	O	So. Atlantic Gas	13	.80	6.1	.89#	12	D	14.6	90	35
9	O	South Jersey Gas	26	1.40	5.4	2.12N	30	23	12.3	66	52
24	S	United Gas Impr.	38	2.00	5.3	2.41Se	16	D	15.8	83	64
33	S	Wash. Gas Light	38	2.00	5.3	3.04De	2	4	12.5	66	42
8	O	Wash. Nat. Gas	15	.40	2.7	.34Se	D33	—	—	117	67
6	O	Western Ky. Gas	14	.60	4.3	1.24Ma	NC	29	11.3	48	35
		Averages			5.1%				13.2	71%	

RECENT FINANCIAL DATA ON TELEPHONE, TRANSIT, AND WATER STOCKS

Rev. (Mill.)			*2/20/57 Price About*	*Dividend Rate*	*Approx. Yield*	*Recent Share Earns.*	*% Increase*	*Aver. Incr. In Sh. Earns. 1951-55*	*Price-Earns. Ratio*	*Div. Payout*	*Approx. Common Stock Equity*
		Communications Companies									
		Bell System									
$5,825	S	Amer. T. & T. (Cons.) ..	177	$9.00	5.1%	$13.10*De	—	3	13.5	69%	67%
245	A	Bell Tel. of Canada	47	2.00	4.3	2.43#*	—	3	19.3	82	63
40	O	Cin. & Sub. Bell Tel.	87	4.50	5.2	5.45#	6%	5	16.0	83	100
187	A	Mountain Sts. T. & T. ..	123	6.60	5.4	8.71Au	2	10	14.1	76	78
308	A	New England T. & T. ...	134	8.00	6.0	9.01De	—	6	14.9	89	60
715	S	Pacific T. & T.	128	7.00	5.5	8.32N	D4	5	15.4	84	58

98	O	So. New Eng. Tel.	40	2.00	5.0	2.22De	15	1	18.0	90	64
		Averages			5.2%				15.9	82%	
		Independents									
4	O	Anglo-Canadian Tel.	32	$ .60	1.9%	$1.76Se	NC	19	18.2	34%	48%
33	O	British Col. Tel.	45	2.00	4.4	3.32Se	6%	22	13.6	60	28
2	O	Calif. Inter. Tel.	12	.70	5.8	.87Se	D17	—	13.8	80	30
13	O	Calif. Water & Tel.	20	1.20	6.0	1.46#	20	11	13.7	82	42
14	O	Central Telephone	20	1.00	5.0	2.15Se	13	14	9.3	47	25
3	O	Commonwealth Tel.	14½	.80	5.5	1.31#	27	26c	11.1	61	32
3	O	Florida Telephone	18	.80	4.4	.88#	10	D	20.5	91	40
210	S	General Telephone	41	1.80	4.4	3.03Oc	NC	31	13.5	59	34
15	O	Hawaiian Telephone	18	1.00	5.6	1.33Ja	D7	19	13.5	75	44
5	O	Inter-Mountain Tel.	14	.80	5.7	.94Je	—	10	14.9	85	55
19	S	Peninsular Tel.	40	1.80	4.5	2.15De	D10	5	18.6	84	46
21	O	Rochester Tel.	18	1.00	5.6	1.62De	2	4	11.1	62	35
3	O	Southeastern Tel.	16	.90	5.6	1.36Se	43	13	11.8	66	42
8	O	Southwestern St. Tel. ...	19	1.12	5.9	1.48Je	36	1	12.8	76	42
28	O	United Utilities	21	1.20	5.7	1.43Se	D13	8	14.7	84	31
12	O	West Coast Tel.	18	1.00	5.6	1.24Se	2	25	14.5	81	43
242	S	Western Union Tel.	19	1.00	5.3	2.21De	5	19	8.6	45	85
		Averages			5.1%				13.8	70%	
		Transit Companies									
22	O	Baltimore Transit	11	—	—	$ .18De	D86%	X	—	—	40%
13	O	Cincinnati Transit	4½	$ .30	6.7%	.34#	16	—	13.2	88%	43
9	O	Dallas Transit	5	.35	7.0	.57#	D48	D	8.8	61	51
31	S	Fifth Ave. Coach Lines	28	2.00	7.1	2.85#	D3	O	9.8	70	100
225	S	Greyhound Corp.	15	1.00	6.7	1.15Se	D11	D	13.0	87	52
21	O	Los Angeles Transit	17	1.40	8.2	.94#	D5	5	18.1	149	89
27	S	Nat. City Lines	21	2.00	9.5	2.74#	D1	11	7.7	73	93
13	O	Niagara Frontier Trans.	8	.15	1.9	1.47#	—	14	5.4	10	78
70	O	Phila. Transit	9	.30	3.3	1.27#	390	D	7.1	24	42
6	O	Rochester Transit	5	.40	8.0	.43#	D2	D	11.6	93	40
23	O	St. Louis P. S.	12	1.40	11.7	.68#	D15	28	17.6	206	91
15	S	Twin City R. T.	16	1.80	11.3	1.21De	1	D	—	—	48
22	O	United Transit	5	.60	12.0	1.03#	94	36	4.9	58	48
		Averages			7.8%				10.7	84%	
		Water Companies									
		Holding Companies									
34	S	American Water Works .	9	$ .50	5.6%	$1.04Se	10%	6	8.7	48%	16%
		Operating Companies									
4	O	Bridgeport Hydraulic ...	31	$1.60	5.2%	$2.04#	12%	4	15.7	78%	57%
13	O	Calif. Water Service	39	2.20	5.6	2.99De	11	O	13.0	74	32
3	O	Elizabethtown Water ...	37	1.00	2.7	3.01Ap	NC	36	12.3	33	56
9	S	Hackensack Water	41	2.00	4.9	3.60#	10	11	11.4	56	37
8	O	Indianapolis Water A ..	19	.37	2.0	1.42De	D12	27	13.4	26	34
5	O	Jamaica Water	33	2.00	6.1	2.94Se	—	10	11.2	68	25
4	O	New Haven Water	59	3.00	5.1	3.32#	D3	4	17.8	90	63
2	O	Ohio Water Service	26	1.50	5.8	2.74Se	42	5	9.5	55	38
7	O	Phila. & Sub. Water	30	.50(e)	1.7	2.20#	11	D	13.6	23	29
2	O	Plainfield Un. Water ...	66	3.00	4.5	5.47#	37	8	12.1	55	40
3	O	San Jose Water	45	2.00	4.4	3.59De	5	10	12.5	56	43
9	O	Scranton-Springbrook ...	17	.90	5.3	1.44Se	10	8	11.8	63	29
4	O	Southern Calif. Water ..	14	.80	5.7	1.08Je	4	8	13.0	74	34
3	O	West Va. Water Service	22	1.40	6.4	1.85Se	41	1	11.9	76	17
		Averages			4.7%				12.8	60%	

A—American Stock Exchange. O—Over-counter or out-of-town exchange. S—New York Stock Exchange. #—Year ended December, 1955. Ja—January; F—February; Ma—March; Ap—April; My—May; Je—June; Jy—July; Au—August; Se—September; Oc—October; N—November; De—December. (e)—Also paid 5 per cent stock dividend December 12, 1956. (i)—Paid 2 per cent stock dividend December 10, 1956. (j)—Paid 10 per cent stock dividend November 21, 1956. (k)—Paid 3 per cent stock dividend December 19, 1956. NC—Not comparable. NA—Not available. D—Decrease. X—Deficit in 1951. *On average shares. **1951 was an abnormally bad year.

What Others Think

New Approaches to Conservation

THE controversial "partnership" power policy has probably provoked more unintelligent discussion than any other program of the Eisenhower administration. When the policy is not attacked as a disguised "giveaway" of our natural resources, it is denounced as a welter of conflicting principles. It seems plain at this point that the policy has attracted adverse criticism, primarily because of what many conceive to be its chief virtue—an undogmatic approach to the complex problems of reclamation and conservation that the nation now faces and will have to face in the future.

One of the clearest explanations of the administration's attitude toward natural resources was given recently by Fred G. Aandahl, Assistant Secretary of the Interior, in an address before the National Farm Institute, in Des Moines, Iowa. The administration's approach, said Aandahl, is "neither revolutionary nor reactionary. It rests on some common-sense propositions on which I think all of us can agree."

"The first," he explained, "is that the proper end for these resources is use, for the human needs of our people today and our people tomorrow.

The Department of the Interior is not presiding over a huge museum, filled with land and water and mineral resources and locked to the living generation. This administration believes these resources are valuable only as a means to an end—the betterment of human life. They must therefore be used.

"They must not, however, be wasted. And they must not be used in a way which will deprive future generations. They must, in short, be conserved. And wherever possible they should be developed, made more productive. The problem is in doing all these things—using, conserving, developing—at the same time.

"A SECOND proposition is that the federal government will not, and should not, handle this problem all by itself. Unless you believe in a system of complete federal domination, you accept the existence and the desirability of private enterprises and many of these will inevitably get into the field of natural resources. The big power company is one such private enterprise; the small family-owned farm is another. You accept also the existence and desirability of state and local governments; these again will necessarily often get into the natural resources field.

"A third proposition is this: Private enterprise alone can't, and shouldn't, handle the problem. How a man uses his natural resources capital is of concern not just to himself but to his fellow countrymen,

present and future. The federal government has a proper, and a vital, rôle to play. So do state and local governments.

"As I've said, most Americans would accept these propositions. They are just common sense. They are part of our system. The practical problem then becomes one of balance: How much federal government? How much state and local government? How much private enterprise?

"Such questions the administration asks itself daily, as one practical matter or another arises. For the administration is simply trying to see that every group—federal, state, and local, public and private—does its full and proper share in each individual case, to assure maximum conservation and development of our resources."

UNDERLYING administration thinking is a keen awareness of the need for water for a nation whose population is expected to reach 221 million by 1975. Said Aandahl:

> Neither agriculture nor man himself can exist without water. Our 1975 population will need about 453 billion gallons of water a day—almost twice the amount we need now. Nearly 170 billion gallons of this will be needed for irrigation. Another two billion gallons will be needed for watering livestock and taking care of the domestic needs of rural families.
>
> In these days of drought and of water scarcity even in metropolitan areas, a speaker might not seem to be adding to the peace of mind of his audience by mentioning the growth in water demand. But you have to remember several things: The total 1975 daily demand equals only about one-third of the amount of water which every day runs off, and percolates into, the soil of the United States. Already, by building more reservoirs, we could get for ourselves a supply of 630 billion gallons a day—considerably more than the 1975 demand. It would be economically possible to do so. Of course, you have to have the water in the right place at the right time; a flood in Ohio can't make up for a drought in Texas.
>
> But even so, we have to keep on working on this problem. Our population growth isn't going to level off in 1975. And the amount of runoff—the water available to us—isn't going to increase. For these reasons, the Department of the Interior and other government agencies are spending a good deal of money on research to expand our knowledge of how to get the water we shall need. The Geological Survey, for example, had an appropriation last year of $8.5 million for water resource investigations. Over $5 million of this amount is to be used to match state funds. The President has recommended that in the coming fiscal year the work of collecting water resource data be expanded.

ONE of the most encouraging developments in the battle to increase water supply is the progress being made in the conversion of salt water to fresh water. Research conducted by Interior's Office of Saline Water has already resulted in a significant reduction of the cost of converting salt water, according to Aandahl, who called the work being done on this problem of the greatest importance. Said Aandahl: "When we can economically take water from the ocean and use it for agriculture, for industry, and for human consumption, we shall have a source of water which is practically without limit."

At the present time, Aandahl said there are several methods in use for the conversion of saline waters. In a couple of the

methods, the estimated cost is now down to 60 cents for a thousand gallons. A third method can convert certain types of brackish water for about 40 cents per thousand gallons. "Because of the progress that's been made," Aandahl said, "we could today supply you with converted sea water for less than the price you now pay for bottled mountain water. And we expect to keep on bringing the price down."

Another means of enlarging the supply of available water is to reduce evaporation in the reservoirs. Chemists have long known, Aandahl pointed out, that if you spread extremely thin layers of certain substances over a water surface, you can prevent evaporation. The most effective known substance is hexadecanol, or cetyl alcohol. Research undertaken by the Bureau of Reclamation has determined that this substance can be safely used in reservoirs without harm to human beings or fish. Primary results from an experiment with cetyl alcohol on Kid's Lake near Oklahoma City have been most encouraging, Aandahl said. The implications, he added, are tremendous. "If a city like Oklahoma City could reduce the evaporation from its reservoirs by only 30 per cent—and this figure is quite probably conservative—it could save about $200,000 a year on its water bill. Actually reductions of evaporation as high as 65 per cent have already been achieved," he said.

A NEW factor has been introduced, so far as water conservation is concerned, with the development of atomic energy. In due course, Aandahl believes, atomic energy can be used to carry the load of gigantic pipeline systems that can bring fresh water to every part of the country, incidentally providing a use for pipelines now used to carry natural gas should that resource ultimately prove to be exhaustible.

"The prospect," said Aandahl, "is exciting: a national population surging well past the 200 million mark; great reclamation and irrigation projects going forward; a network of pipelines carrying desalted water from the seacoasts to places where it is needed; hydrogen or atomic power pumping this water through the pipes, the same power firming hydroelectric output at the great dams."

But this prospect, however unusual, concluded Aandahl, is just an extension of the vision which guided Theodore Roosevelt and Gifford Pinchot a half-century ago—a vision shared by an ever-growing number of Americans since their time.

Competitive Power from Nuclear Fission

WITH the Atomic Energy Commission sharply divided on the adequacy of the government's atomic industry program, a view from private industry on progress to date and prospects for the future comes at a particularly appropriate time. Such a view was presented recently in an address by Willis Gale, chairman of the Commonwealth Edison Company of New York, before The Bond Club of New York on February 20th.

Gale's discussion of the prospects for the achievement of competitive power from nuclear fission was based on first-hand knowledge acquired from his company's plans for a nuclear plant. The plant, called "Dresden Station," will be located on a 950-acre site about 50 miles southwest of Chicago.

Commonwealth Edison has a contract with General Electric for the construction of Dresden for $45 million. According to

Gale it is the largest all-nuclear plant yet authorized. Associated with Commonwealth Edison in what is known as the "Nuclear Power Group" are American Gas & Electric Service Corporation, Bechtel Corporation, Central Illinois Light Company, Illinois Power Company, Kansas City Power & Light Company, Pacific Gas and Electric Company, and Union Electric Company. Commonwealth Edison will own and operate the plant and is paying $30 million of the $45 million contract price. Gale's company is also furnishing the site and incurring substantial overhead costs. The companies associated in NPG are providing $15 million of the contract price as a research and development expense. The plant is scheduled for completion in 1960.

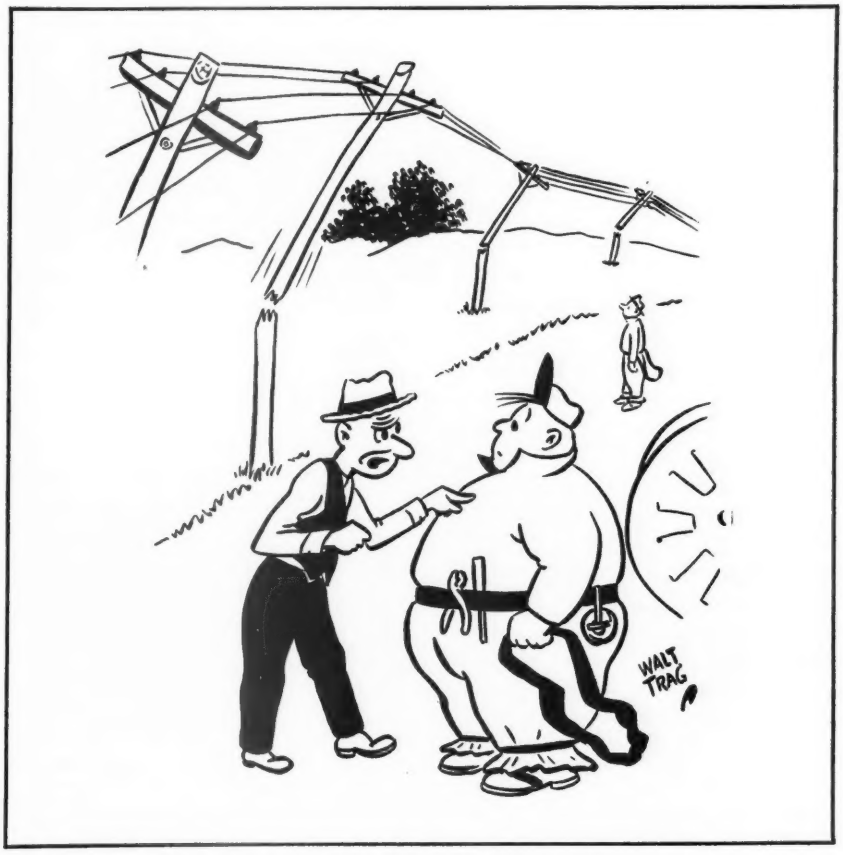
How close will Dresden come to producing competitive power? "On the basis of disregarding the $15 million of research contributions," said Gale, "we estimate that the plant ultimately will produce power at a cost, including fixed charges, operating expenses, and fuel, of approximately three-fourths of a cent per kilowatt-hour. This is about the same as the cost of power from our newest coal-fired plants."

He continued:

> If the $15 million of research contributions were included, the estimated cost would be about one cent per kilowatt-hour, or one-third higher than that from our conventional facilities. These unit power costs, of course, assume that General Electric's expenditures will not exceed the $45 million contract price. I doubt if this is a valid assumption.
>
> All this means that if General Electric can sell the second, third, or fourth plant of our size and type for $15 million less than the first, we may be on the track of competitive nuclear power. But that "if" is a big one.
>
> Having firsthand knowledge of the problems involved in actually building a plant, I can state with some assurance that competitive nuclear power is not just around the corner. This is especially true in the United States where fossil fuels are plentiful and cheap.
>
> On the other hand, I am equally confident that sooner or later competitive nuclear power will become a reality. It will be achieved through the building of a series of full-scale model T's resulting in gradual improvement in our technology. Also, it may come in part as a result of a rise in the cost of fossil fuel.
>
> So the first lesson . . . is—
>
> Don't go overboard on atomic power for the short term but be optimistic for the long term.

On the question of where the United States stands in relation to what has been publicized as an atomic power race with England and Russia, Gale believes there is no need to be concerned about the technical progress of our nuclear power program in the United States. He stated:

> We may not have as many kilowatts of nuclear capacity as England or Russia five or ten years from now. In my opinion, that is not of overwhelming significance. What is important is that we stay in the lead in technological development which I believe we will do. That, for America, should be the significant fact. We are not faced with a shortage of power. It is "know-how" we need, not kilowatts.
>
> On the other hand, there is a growing opinion, in and out of government, that international prestige makes it desirable for us to accelerate our program. Commissioner Harold S. Vance



"FROM NOW ON YOU STAY GROUND GRUNT, OK?"

of the AEC made an excellent statement of this problem in his appearance before the Atomic Industrial Forum in Chicago last September.

I know from personal contacts that a number of men in Congress, wholly without reference to the public *versus* private power issue, sincerely believe that our atomic power program should be accelerated for this reason.

GALE recalled that toward the close of the last session of Congress, Senator Gore and others sought to bring about the passage of a bill which called for the construction by the AEC of $400 million of atomic plants. The bill was the subject of heated controversy. It has been reintroduced this year and may be the subject of further controversy.

"Everything considered," Gale said, "I do not disagree with those who believe that our atomic power program should be expanded beyond the ability of private industry to carry the entire cost. In my opinion, however, the expansion should be accomplished so that public power is not favored over private power. In fact, the

matter is of such importance that the public power controversy ought to be kept out of it entirely."

GALE believes the AEC's so-called "Power Demonstration Reactor Program," under which the AEC makes research contributions toward the cost of reactors, provides the framework for the government and the utilities, both private and public, to co-operate in the building of additional power reactors. To complement that program, Gale recommends:

(1) That Congress declare as a matter of national policy that the demonstration program be expanded.

(2) That Congress specify the extent of the expansion.

(3) That Congress appropriate the necessary funds.

(4) That Congress give the AEC specific authority to make direct cash contributions toward the capital cost of a reactor to be built by an existing privately or publicly owned utility.

(5) That Congress specify that the government funds appropriated for the demonstration program be allocated between privately and publicly owned systems roughly in proportion to the present amount of private power compared with the present amount of public power.

Under the Demonstration Program, the AEC has made or is negotiating contracts with both privately and publicly owned utilities. The Yankee Atomic Electric project is an example of the former. The Nebraska Consumers Public Power District project is an example of the latter. This policy should be continued.

(6) That Congress specify the general principles on which contributions would be based.

Any utility, public or private, ought to be willing to put into a project an amount justified on the basis of its own conventional power costs. The utility should pay an amount on the basis of which the over-all unit cost of power would be the same as that from its conventional facilities.

The contribution by the AEC should be the difference between the utility's investment and the total cost of the plant. It would be highly desirable if a large part of the utility's share could be fixed, and the AEC's contribution most of the uncertain excess. It is almost impossible to estimate accurately the final cost of a project where new concepts are involved.

SUCH is Gale's proposal for accelerating the nuclear power program through co-operation between the utility industry and the AEC.

As he sees it, the principal advantages of this proposal are:

First, it would minimize the public *versus* private power controversy in relation to atmoic power.

Second, it would encourage a maximum of financial participation by existing utilities and would correspondingly reduce the burden on the federal treasury.

Third, it would provide the foundation for a true atomic power industry in the United States. We will not have such an industry until existing utilities, after a careful study of relative costs, walk up to the counter and buy nuclear plants as a strictly business matter. Actual experience with demonstration reactors would provide the basis for these decisions.

Up to now the principal concern has been to learn how to make power from the atom, Gale said. Now that we have, the principal concern is to learn how to make competitive atomic power. In this phase,

there must be a maximum of participation by existing utilities.

In conclusion, Gale put in a plug for the indemnity bill in which every private and public builder of a reactor has a vital interest. This bill was favorably reported last year by the Joint Committee on Atomic Energy. It would provide federal indemnity up to $500 million against third-party public liability in excess of the private liability insurance carried by the reactor owner. Said Gale:

> In time, atomic power plants will prove to be at least as safe as conventional plants. As Mr. Satterfield of the AEC staff recently said, the opinion is that the risk of disaster resulting from an atomic power plant is substantially zero. Nevertheless, no scientist can demonstrate this without actual extended experience in the operation of reactors and none is willing to say that the risk is zero. It is in the interest of the public at large, as well as in the interest of reactor owners, that this remote, but potentially large, risk be provided for.
>
> There was almost universal agreement as to the need for federal indemnity and almost universal approval of the form of the bill proposed by the Joint Committee. It failed to pass only because it became involved with the Gore Bill controversy.
>
> It is of vital importance that the indemnity bill, which has been reintroduced, be passed by the present Congress.

"In the past year, we have had a number of contacts with the Joint Committee and particularly its then chairman, Senator Clinton P. Anderson, and our Illinois member, Melvin Price," Gale stated. "In our presentation of the indemnity problem, we were given every consideration. We believe that the entire committee approached this problem with true statesmanship. I am confident that this will be true also under Chairman Durham's leadership."

Gale said his experience with the Joint Committee on Atomic Energy has convinced him that it is possible to get along with Congress on a fair give-and-take basis and that industry ought to make every effort to do so. If it does, he is sure that it will help speed the development of competitive atomic power.

Oil Price Boost Hits Florida Utilities

The sharp increase in fuel oil prices has created a problem for both public and private utilities in Florida, which is wholly dependent on oil for steam generation, as contrasted with other states which have coal and/or natural gas.

McGregor Smith, chairman of the Florida Power & Light Company, Miami, recently sent a telegram to President Eisenhower and to Florida's delegation in Congress protesting against what he termed "unjustified" increases.

In a statement, he said:

> We know of no reason whatever to justify any such terrific increase in fuel oil prices. We are glad that Congress is setting up two oil investigating committees. We hope they will act promptly. The economy of Florida is based on fuel oil and it is one of the largest users in the nation.

"Back in 1948," continued Mr. Smith, "when oil prices were skyrocketing because of a tanker shortage, they did not soar to today's prices." At that time, he

added, the mayors of Florida hastened to Washington and appeared before various governmental officials, Florida Senators and Representatives, and a congressional oil investigating committee which was in session then, and demanded relief from the "prohibitive oil prices." Shortly thereafter the price of fuel oil dropped more than half. He stated further:

> We do not understand that there are any large amounts of fuel oil being shipped out of the country to western Europe. The allowable production set in Texas, according to our information, has not been increased. The shortage of tankers should not bring about any sharp rise in prices at Gulf refineries.
>
> We are hopeful that some concerted action will be developed by our public officials of Florida to bring the seriousness of this matter to the attention of our congressional delegation, President Eisenhower, and others who may be in a position to do something about it.

WHILE the major private utilities in Florida are protected by an escalator clause whereby their rates are based on fuel oil prices, most of the publicly owned utilities have no such clause. J. Dillon Kennedy, commissioner in charge of electricity and water in Jacksonville, asserted that the increases in fuel oil prices will cost Jacksonville about $1 million a year. At Tallahassee the city commission passed an ordinance for the second time in two weeks raising electric rates 3 per cent each time, but permitting the rate to rise or fall in consonance with fuel oil prices. Jacksonville and some other cities owning their own electric plants have not yet adopted such an escalator clause, which the private companies were permitted to do by the Florida Railroad and Public Utilities Commission.

The electric rate rise permitted to the private utilities amounts to about 5½ per cent under their protective clauses. The Florida Power & Light Company announced that the first rise in fuel oil prices in December did not affect January residential billings because the company was permitted under its contracts to take a certain quantity of oil at the old price. "This quantity," said McGregor Smith, "has been used up and the new price is up approximately 30 cents a barrel, and residential bills beginning with meter readings February 10th will be based on our oil price at the end of January. This will mean an automatic 2½ per cent increase in our residential rates affecting more than half a million customers. A second increase has just been announced but it will not be reflected in the February bills as we will continue to purchase oil at the present price through the end of this month. It appears that this second increase will amount to at least 35 cents a barrel which we will be paying in February. This will add another 3 per cent to the residential rates beginning March 10th, unless something is done in the meantime to bring about a reduction in fuel oil prices."

—C. E. WRIGHT

National Transportation Policy

THE time has come for an "independent re-examination" of the whole field of national transport policy, according to E. Roland Harriman, New York banker and railroad official.

Addressing the 1957 Transportation Management Program of the Columbia University Graduate School of Business, Harriman declared such a nation-wide study is especially opportune because the

"DIRECT DIALING IS SENDING OUR SIGNALS ALL THE WAY TO KING WOMBASI!"

report of the President's Advisory Committee, usually called the Cabinet Committee, "has created more stir in the transportation industries than for many years past." The meeting of the Transportation Management Program was held in January at Arden House, Harriman, New York.

"THIS nation," said the chairman of the board of the Union Pacific Railroad, "has not and never has had a complete and co-ordinated transportation policy. The so-called national transportation policy of the Interstate Commerce Act applies only to those carriers that are regulated by the Interstate Commerce Commission. While that includes all of our railroads and most interstate petroleum pipelines, it covers perhaps only a third of our intercity trucking and 10 per cent of our domestic water-carrier movement of freight. It excludes both air transportation and ocean shipping, both of which are subjected to other and separately stated policies and regulated by separate governmental agencies. Both in government and in business we look at separate portions of transportation most of the time and rarely at the whole. We develop not only clearly

distinct transportation industries, but distinct government agencies charged with fostering, developing, and regulating certain of these industries. But to certain large segments of transportation we allow free and virtually unregulated development, while we place others under heavy restraint. It would appear strange indeed were such a mixture to produce for us the best of which we are capable."

In calling for an independent re-evaluation of the nation's transport policy, possibly by universities such as Columbia, Mr. Harriman said the industry faces "enormous gaps in our knowledge of transportation, a fact which becomes more and more apparent as our unguided growth continues and as technical change and shifts in the business world increase the complexity of the transportation scene."

"The ICC," said Harriman, "has published railroad statistics on a comparable basis as among companies since 1889, but it is astonishing how far existing data fall short of answering the more important questions of the present—witness the controversies over the passenger deficit, over the costs of conducting freight transportation, and over the usefulness of available data for the measurement of efficiency and the control of operations.

"About most motor freight transportation we know virtually nothing. It would appear that only about 37 per cent of the intercity trucking is covered by ICC regulation and a moderate amount of statistical information is collected only from the class I carriers among that 37 per cent." He continued:

> With inland water transport, the case is possibly worse, since it is likely that only 10 per cent of the business is regulated and our information on the nonregulated portion is not much more complete than on the unregulated trucking activities.

Clearly, if we are to devise a wise transportation policy for the nation, at least the more important gaps in our knowledge must be filled. And an enlarged stock of information must be analyzed in such a way that it is brought to bear on the question "What kind of a *transportation* system would serve America best and how can we get it?" In a recent address Howard Freas of the Interstate Commerce Commission called attention to the need for much deeper study of our present transportation problems and proposed that such study be undertaken with the co-operation and financial backing of all elements of the transportation industry. This is an excellent proposal. I would suggest, however, the extraordinary importance of securing conditions for such a study which leave as little room as possible for questioning of the motives of those chosen to carry out the work and as little room as possible for cries of bias or prejudice, for if any changes of consequences are proposed they will tend to hurt some interests in this complex field and to benefit others.

Harriman said that it may be that the universities "in some co-operative fashion and with foundation or other support could undertake a work even of this magnitude, standing as they do independent of government and of industry alike." He noted a number of important studies have been made in the universities of certain aspects of the transportation problem and others are in progress. An effort is being made at Northwestern University to develop a transportation research and teaching center with industry-wide support, and significant special studies are under way at Harvard, at

Stanford, and at other institutions. But up to the present, he said, no one has come forward with a broader proposal which would utilize, in so far as possible, the resources available in a goodly number of institutions with a view to making a relatively massive attack upon the problem.

"As the report of the President's Advisory Committee, usually called the Cabinet Committee, has created more stir in the transportation industries than for many years past, the time is perhaps particularly ripe for independent re-examination," he concluded.

Notes on Recent Publications

OPERATIONS RESEARCH: A BASIC APPROACH. This new American Management Association report discusses operations research without excessive dependence on mathematical formulas. By showing the applications of OR techniques in a number of industries, *"Operations Research: A Basic Approach"* gives the typical operating executive a good introduction to this technical subject.

The importance of operations research as a tool for problem solving and decision making is accepted today. Like many other new management developments, however, its complexity often prevents the nonspecialist from personally exploring its potentialities.

This report avoids the almost inevitable complications by showing what has actually been accomplished by OR, while avoiding most of the formulae and jargon.

Automatic data processing has given management an unparalleled opportunity to apply scientific and mathematical techniques to the solution of business problems. Operations research has been used by the military, industrial, academic, and consulting areas, and the specific use of OR in solving industrial problems has been expanding rapidly. However, actual applications have been isolated: A recent Booz, Allen & Hamilton survey of 39 companies identified as active in the OR movement shows that only three had a strong well-defined operations research program under way, another six had some projects under development, and the remainder had used OR techniques sporadically.

It is interesting to note that the consensus of companies in the last group is that they had obtained enough tangible results to encourage them to go further.

Regardless of the situation today, it is clear that OR is important, and that an executive who wishes to keep up to date on new management developments must know something about this research tool.

This report (as well as the seminar at which the papers included in this report were originally presented) is a beginning effort by AMA to present the fundamental concepts of operations research in basic business language.

From the beginning paper, which defines the terms used, describes the method, and points to some problem areas in OR; to the last paper, which looks ahead to new developments and applications, *"Operations Research: A Basic Approach"* is a very welcome addition to management literature. Published by American Management Association, 1515 Broadway, New York 36, New York. 111 pages. Price, $3.75 (AMA members, $2.50).

UNIFORM SYSTEM OF ACCOUNTS. The National Association of Railroad and Utilities Commissioners' Uniform System of Accounts for Electric, Gas, and Water Utilities, two separate books, are now again available, reprints having been made due to the heavy demand for copies.

These are the systems of accounts prepared by the association's committee on accounts and statistics of public utility companies and recommended by the association for adoption by the various state public utilities commissions. The books are published by The State Law Reporting Company, 30 Vesey street, New York 7, New York. Price, per book, $5.

The March of Events

FPC Approval Sought for Expansion Program

THE Transcontinental Gas Pipe Line Corporation recently filed an application with the Federal Power Commission for a certificate to construct $61.5 million of new facilities as a major part of its $113 million construction program planned for this year.

A large part of the construction will be seven new main-line, intermediate compressor stations in Louisiana, Mississippi, Alabama, Georgia, North Carolina, and Virginia. Additional compressor engines will be installed in nine existing stations, Tom P. Walker, president of Transcontinental Gas said. The new facilities will expand daily allocated capacity by about 111.4 million cubic feet.

The company already had pending before the FPC, final approval of a $50.9 million construction program started last fall.

Idaho

Senate Passes Power Legislation

A BILL aimed at preventing customer pirating either by private power firms or rural electric co-operatives was passed by the state senate last month. It would prevent REA's and private power firms from duplicating services. If a customer desired to change his service he would have to get permission from the district court of his area.

The measure, which was sent to the house, was sponsored by northern Idaho REA's, which have complained in recent months that a private utility was moving in and taking some of their customers.

Maine

Rate Base Procedure Change

A CAMPAIGN by the Maine Committee for Fair Utility Rates to initiate a legislative bill to change the procedure for fixing public utility rates fell about 6,000 signatures short of the required number, according to an announcement last month by the Maine secretary of state's office.

If the drive had succeeded, the bill would have gone to referendum automatically if the state legislature defeated or amended it.

It proposed that utility rates be based on the "prudent investment" of the utility in operating property. A bill to accomplish the same purpose has been introduced in

the current state legislative session by Representative Haughn, Bridgton Republican.

Proponents contend that "current value" or "reproduction cost" of utility property, one factor which the state public utilities commission now must consider, tends to inflate the rates.

Former utility commission chairman Frank E. Southard, committee's counsel, has registered as the committee's legislative agent to work for passage of the Haughn bill. Charles White of Winthrop, for many years treasurer of the Maine State Grange, is chairman of the committee.

Maryland

Tax Plum Voted Pepco

A LEGISLATIVE tax plum for the Potomac Electric Power Company was enacted last month by the state house of representatives and sent to Governor Theodore R. McKeldin for his signature.

Delegates unanimously passed the bill to exempt Pepco from paying state and county taxes on a dam it will build to serve its $100 million power-generating plant at Dickerson, Maryland. Site of the proposed dam is at the junction of the Potomac and Monocacy rivers in upper Montgomery county.

The exemption measure, introduced by Senator Edward S. Northrup (Democrat, Montgomery), already had cleared the state senate. It is aimed at inducing the utility to keep its plant on Maryland's side of the Potomac, it was reported. Earlier, Pepco had planned to build the plant in Loudoun county, Virginia. But Montgomery residents protested that they, and not Virginia residents, would be principal consumers of power from the new source.

Missouri

Gas Boost Planned

PLANS for a 10 per cent increase in natural gas delivery to the St. Louis area by the 1958-59 heating season were announced recently by the Mississippi River Fuel Corporation, which operates the pipeline system serving Laclede Gas Company.

The increase will be accomplished by installation of 125 miles of pipe along present lines, together with pumping equipment, sufficient to supply an additional 50 million cubic feet a day.

A spokesman for Laclede Gas said the pipeline company's program should mean that an additional 10,000 to 12,000 domestic home-heating customers can be served in the St. Louis area on the basis of Laclede's obtaining about half of the additional gas supply, as it anticipates. These customers will be in addition to other thousands whose homes probably can be supplied with gas for heating both in the 1957-58 and 1958-59 seasons through use of the new Laclede underground reservoir in northern St. Louis county, it was said.

New York

Commission for Resale Law

THE state public service commission contended recently that a law giving it control over resale prices of State Power Authority electricity would be legally valid.

It made the contention in a brief filed with Senator Austin W. Erwin, chairman of the state senate finance committee, and Assemblyman William H. Mackenzie, chairman of the house ways and means committee. The brief answered arguments advanced by the power authority in opposition to such a law.

According to the power authority, its obligation to its bondholders would be impaired by giving the commission control over resale rates. The commission's answer said the state legislature had specifically reserved the right to enact such a law when it set up the authority. Therefore, it argued, purchasers of authority bonds were on notice that the law could be changed when they bought their bonds.

Texas

Interest from Gas Tax Claim Suits Barred

A TEXAS legislature's resolutions authorizing natural gas companies to sue for recovery of taxes paid under a 1951 act which was later held unconstitutional, did not provide for any payment of interest. The decision was announced by the third court of civil appeals at Austin last month, overruling a district court's decision that 6 per cent interest should be paid by the state from the date the court entered judgment until the state actually refunds the money.

The trial court had awarded El Paso Natural Gas Company $2,658,935 and Northern Natural Gas Company $257,533, plus interest. The district court upheld awards of the principal sums but not of the interest. It said payment of interest was not authorized by the legislature.

Utah

Gas Rate Increase Granted

A RATE increase averaging 8.3 per cent on its Utah business was recently granted the Mountain Fuel Supply Company. The Utah Public Service Commission issued an order granting the increase following hearing on an application of the company for a 9.5 per cent increase.

By its action, the commission permitted the gas concern to increase its annual revenues on Utah business by $2,071,766. The company had asked for an added $2,364,800.

The new rates would be effective after the company filed its new schedule with the commission and after one day's notice to the commission and the public.

Washington

Court Blocks Initiative

THE state supreme court last month blocked submission to the state legislature of an initiative measure designed to prevent the city of Tacoma from building its huge Cowlitz hydroelectric project. The court's action was its second in less than a week stemming from the conflict over the proposed $138 million project.

The high tribunal earlier had ruled Tacoma had no legal power to condemn a fish hatchery and other state property in building two dams on the Cowlitz, at Mayfield and Mossyrock sites.

The issue was placed in the hands of the state legislature. Two measures—one giving the city the right to condemn the state property involved and one prohibiting the building of the dams—were before the legislature.

The initiative is sponsored by the Washington State Sportsmen's Council.

Progress of Regulation

Trends and Topics

Price Regulation for the Petroleum Industry

WILL the petroleum industry join the public utility family? The gas-producing phase of the business has already been brought under control by the Federal Power Commission. Boosted oil and gasoline prices following interruption of oil supplies in the Middle East have stirred up demands for governmental price regulation. This again raises questions as to the extent to which government can go in price fixing. More specifically, from the viewpoint of those interested in public utility regulation, there is the question: Is the petroleum industry a public utility?

Regulation of Nonutility Business

Incidentally, it may be noted that some types of regulation have been upheld by the courts even though a business is not a public utility, as in the case of insurance, banking, and security transactions. Monopolistic practices are regulated. A war emergency may justify price regulation which would not be legal in peacetime. Oil and gas production are regulated in some states as a conservation measure without regard to public utility status.

The Supreme Court, in the German Alliance Insurance Company case, in 1914, held that the business of fire insurance was so affected with a public interest as to justify legislative regulation of its rates. The court, however, did not go so far as to say that it was a public utiliy subject to regulation in all its aspects (233 US 389).

The fact that some regulation of prices may be justified even though an industry is not a public utility is indicated by the Supreme Court decision in the case involving regulation of milk prices in the state of New York. Minimum and maximum prices were covered. Unfair trade practices were also involved. The court held that a state law creating a board to fix the price of milk was not void because the dairy industry was not a public utility, since the industry was nevertheless subject to regulation as a business affected with a public interest (291 US 502, 2 PUR NS 337). The necessity of protecting the public

against contamination of milk, resulting from prices too low to pay the cost of safeguards, was a factor.

On the other hand, attempts to regulate various kinds of business not classified as public utilities have failed. The Supreme Court, for example, held that the operation of an employment bureau is not a business so charged with public interest as to give the state power to regulate its rates for service (277 US 350). The Florida supreme court held that the regulation of prices to be charged by barbers could not be justified by the claim that the barber trade is a paramount industry of the state intimately connected with its welfare, so that the state might prescribe prices for services rendered by each barber (123 Fla 401, 167 So 394).

The Oklahoma commission held that it had no jurisdiction to punish a newspaper not constituting a virtual monopoly, for unlawful discrimination in the matter of printing advertisements, since the publishing of a newspaper is not a public business within the meaning of a statute giving the commission jurisdiction over businesses affected with a public interest (PUR1920D 384). A federal court held that a daily newspaper business was not so clothed with a public interest as to warrant the imposition of an obligation to sell advertising space to advertisers on equal terms (PUR1931D 361). The newspaper business, according to a New York judicial decision, in the absence of statutes to the contrary, is a business essentially private and is not in the same category as common carriers or innkeepers (184 Misc 389, 53 NYSupp2d 475).

Unsuccessful Attempt to Regulate Gasoline Price

Coming back to the question of regulating petroleum prices, we find clear statements by the Supreme Court on the public utility status of the industry in the Standard Oil Company case (278 US 235, PUR1929A 450). A Tennessee statute provided for regulation of the price of gasoline, with a differential between wholesale and retail prices. Rebates, price concessions, and price discrimination between persons or localities were forbidden. The Supreme Court held that the state was without power to impose such regulation. A business or property involved in regulation, said the court, must be "affected with a public interest." That phrase by repeated decisions of the court had become the established test by which the legislative power to fix prices of commodities, use of property, or service must be measured.

As applied in particular instances, the court continued, its meaning may be considered both from an affirmative and a negative point of view. Affirmatively, it means that a business or property, in order to be affected with a public interest, must be such, or be so employed, as to justify the conclusion that it has been "devoted" to a public use and its use thereby in effect "granted" to the public. Negatively, it does not mean that a business is affected with a public interest merely because it is large or because the public are warranted in having a feeling of concern in respect of its maintenance.

It had been urged that gasoline was of widespread use, that enormous quantities were sold, and that it had become necessary and indispensable in carrying on commercial and other activities within the state. But the court said it was

concerned with the character of the business, not with its size or the extent to which the commodity was used. Gasoline is one of the ordinary commodities of trade, differing in no essential respect from a great variety of other articles commonly bought and sold by merchants and private dealers. The decisions made it clear that this business did not come within the phrase "affected with a public interest."

A state law purporting to regulate the price to be charged for standard petroleum products was held by the Montana supreme court to be an unwarranted attempt by the legislature to interfere with a business not sufficiently affected with public interest to warrant regulation by the state (94 Mont 488, 22 P2d 1056).

Review of Current Cases

Earnings Requirement Supports Rate Increase But Capital Cost and Rate Base Examined

PENINSULAR TELEPHONE COMPANY obtained authority from the Florida commission to increase exchange rates about 14 per cent, producing a rate of return of 7.06 per cent on its exchange property. A rate increase was made necessary, the company said, by rising operating costs coupled with increasing investment per station.

In five years the utility company expanded its service from 172,000 stations to 270,000. Gross construction for the 5-year period exceeded $50 million, requiring the company to raise approximately $35 million in new capital. Further expansion is yet required to meet demands for service.

Earnings Requirement Approach

Discussing earnings requirement and rate of return, the commission asserted that neither the rate base nor the rate of return is particularly important if the utility is allowed to earn sufficient dollars to meet operating expenses including depreciation and taxes, fixed charges, dividends on equity, and retention of some earnings. While the commission authorized the requested rate increase on the ground of earnings requirement, it noted that its conclusions, tested by the rate of return method, were reasonable for both the utility and the public.

Cost of Capital

Expert witnesses for the company recommended that cost of capital be computed at considerably higher figures than the company's experience data would indicate.

It was observed that the company had experienced no difficulty in marketing securities in past years. In determining cost of capital the commission used the composite debt cost of 3.6 per cent, the composite preferred stock dividend of 5 per cent, and the highest annual earnings on common equity over the past 5-year period, 9.7 per cent. Capital ratios averaged over the same period were applied. They were 39.32 per cent, 17.59 per cent, and 43.09 per cent, respectively. Consideration was given to amortization of discount on long-term debt and release of premium, and adjustment was made for interest during construction.

Working Capital and Tax Deduction

The company requested a working capital allowance for materials and supplies equal to 2 per cent of plant in service, along with an allowance for cash working capital of one-eighth of toll operating expenses less taxes and depreciation. While the commission noted that allowances so computed had been approved in the past, it thought a different treatment should now be applied. One-third more than the amount shown to be required by the company's actual experience was allowed for materials and supplies.

No allowance was required for exchange operations since the subscriber is charged for exchange service in advance. But an average of forty-five days elapses between the time toll service is provided and collections are made. For this item the commission took the toll operating expenses, less depreciation and the storm damage provision, and ascertained one-eighth of such expense.

A deduction from working capital was made for federal income tax accruals since a portion of such accruals are available for use by the company. This deduction was computed at 17½ per cent of the accruals.

Other Rate Base Adjustments

The commission refused to include plant under construction in the rate base. Apparently the company sought to include such property by the expedient of failing to exercise its right to charge interest on plant during construction. Plant under construction is not used or useful in rendering service.

A proposed depreciation reserve apportionment between exchange, state toll, and interstate toll on the composite factor of total investment in depreciable property was rejected. Instead, the commission apportioned the reserve on a theoretical straight-line method as prescribed in the NARUC Separations Manual. It assigned to each type of operation its relative portion of the rate base.

Storm Damage Provision

The proposed provision for storm damage was reduced. The company determined the annual amount by taking the percentage of the average storm losses during the past fourteen years to the average outside plant for the same period and then applying that percentage (.4919) to the outside plant at the end of the test period. This method resulted in an unreasonably high provision. It failed to take into account a large reserve already provided for storm damage. Neither did it consider the effect of the federal income tax. And it ignored the accrual of the depreciation reserve on the same property.

In view of the large reserve already accumulated, the commission authorized an annual provision based on net additions to outside plant. The percentage figure used was 2.89, which was the greatest percentage loss of plant in a single year. The amount so computed was reduced by 52 per cent for income tax. *Re Peninsular Teleph. Co. Docket No. 4788-TP, Order No. 2426, December 18, 1956.*

Rate Base Figures Unreliable but Earnings Requirement Supports Rate Increase

EMPHASIZING earnings requirement rather than rate of return, the Florida commission authorized Florida Telephone Corporation to increase its exchange rates in a substantial amount. The company is engaged in a large expansion program.

During the past ten years its plant-in-service investment increased 641 per cent and its invested capital 638 per cent. In the same period it had 10 bond issues, two preferred stock issues, and eight common stock issues.

As a result of such extensive investment, along with increased operating costs, the company complained that its earnings had become inadequate.

Using earnings of 10.10 per cent on common equity, 5.35 per cent dividends on preferred stock, and 4.01 per cent for bonds, which was the composite rate comprehending 4.75 per cent for a proposed new bond issue, the commission found a composite capital cost of 6.83 per cent and computed the earnings deficiency for the test year. But since an end-of-year rate base was used, it was necessary to take into account an increase in the number of stations in service as well as a permanent capital increase per station resulting from the inflationary effect of construction costs.

A gross increase in operating revenues of $422,383 was requested. The commission granted $310,540, though it recognized that the rates of this company were somewhat higher than those of comparable utilities. The applicant's expenses per station in 1956 were $69.51, substantially more than the cost to telephone companies serving similar communities. The additional income allowed would result in a rate of return of 6.56 per cent on net investment.

Unreliable Rate Base

The commission voiced dissatisfaction with the rate base figures presented. No plant ledger had been maintained over a period of many years and many retirements from plant in the past, as recorded on the books, were mere estimates. Consequently, the accuracy of the investment and depreciation accounts could not be determined by audit.

The commission indicated that it would require a physical appraisal to be made, together with observed depreciation, as a basis for permanent rates. In the meantime, however, in view of the urgent need for additional revenues to enable the company to continue its expansion and improvement program and discharge its service obligation, the commission was compelled to accept the figures submitted regarding physical plant and depreciation.

Working Capital Adjustment

The only modification which the commission made in the rate base submitted was in the allowance for working capital. The company computed the provision for materials and supplies at 2 per cent of plant in service. This approach was described as unsound.

The allowance was fixed at 1½ times the average monthly issues of material and supplies where materials and supplies on hand, plus material received, equaled approximately that ratio to actual supply issues.

This allowance, which the commission considered liberal, took into consideration the fact that construction materials represent an investment unproductive of earnings for a period pending actual construction. One month's operating expense was allowed for cash working capital.

The commission noted that the working capital provision is intended to allow a utility to earn some return on capital necessarily invested in performing public service between the time such service is performed and collections are made. But a converse lag was also noted with respect to the utility's free use of income tax accruals. The equitable way to compensate the ratepayer for the use of his money, said the commission, is to make

a reasonable deduction from the allowance for working capital since tax accruals can be used in lieu of working capital. An appropriate adjustment was made. *Re Florida Teleph. Corp. Docket No. 4705-TP, Order No. 2429, December 27, 1956.*

Additional Revenue Granted Despite Failure to File Proposed Tariff

A MOTION to dismiss a telephone company's application for additional revenue was denied by the Missouri commission. Protestants had contended that the applicant, by not filing proposed tariffs, had failed to sustain the burden of proving the unjustness of the present level of rates or that the proposed rates were just.

The law provides two methods, pointed out the commission, for a utility to institute a proceeding for rate relief. One way is to file the new rates. Upon receipt, unless suspended by commission order, the new tariff becomes effective within thirty days. If a suspension order is issued, a docket number is assigned and the cause comes on regularly for hearing.

The other method is for the utility to file a formal petition for relief, thus dispensing with the necessity of filing a tariff with the application. The company, in this case, had chosen the latter alternative.

Upon a showing that conversion to dial had increased operating expenses and deteriorated the existing return, the commission authorized additional revenues. Although the increases would yield a relatively low rate of return upon the equity invested, it was expected that the company's earnings and rate of return would be materially increased in the near future by the addition of new subscribers. *Re Fidelity Teleph. Co. Case No. 13,529, January 18, 1957.*

Monthly Peak More Reasonable Than Single-day Peak For Allocation Purposes

THE question arose, in a natural gas company's intrastate rate proceeding, whether allocations should be made on the basis of a single-day peak, as requested by the company, or on a monthly peak. The West Virginia commission chose the latter, commenting that single-day peaks were based on estimates and not, as in the case of monthly peak, on actual measurement.

The company had sought to distinguish its peak-day method by basing the peak day not on the temperature, but on the day on which the largest volume of gas had been received into its system. The estimate problem still remained, pointed out the commission, although it appeared that criticisms of the company's method may have been alleviated to some degree by the use of actual measurement in many cases where estimates were used before. The system could still be criticized because of the fact that in many ways the company could control the amount of gas that came into the system and vary it in some degree from the gas actually used in the system. The amount of gas coming into the system on any given day was not necessarily the amount of gas that was used on the same given day.

Higher Cost of Purchased Gas

The commission's staff had contended that certain amounts of peak-day gas pur-

chased by the company from another company should be adjusted from the actual cost to the price which had been paid for the same volume of gas at an average fuel price, plus transmission and compression expense. The staff claimed that the system could have been revamped or redesigned at an earlier time so as to use other gas obtained at a cheaper price and make the purchase of the higher-priced gas unnecessary. A downward adjustment from the actual cost was sought.

The commission allowed the actual cost to the company of the gas purchased. There had been no showing that other gas was available to meet the peak demand which the purchase supplied, and it was clearly shown that additional facilities would have to be built. It was worth noting, commented the commission, that even if the gas were available, the expense of the additional facilities would probably make the cost of serving the area with local gas as expensive as purchasing gas from the other company.

Geological Inaccuracies

The commission's staff had taken the position that certain natural gas acreage should have been excluded from the company's rate base and the company allowed, as expense, a certain amount per Mcf for the gas it actually obtained from that field. The company had purchased the acreage upon recommendations from its geological department. The estimates had subsequently proved erroneous and remaining reserves were not as large as had been anticipated at time of purchase.

The commission did not feel justified in excluding the field from the rate base. The estimation of gas reserves is most difficult, pointed out the commission. Although a geologist might estimate reserves and a company might necessarily be bound to base its conclusions on the estimate, no geologist would say without question that estimated reserves would prove to be 100 per cent correct.

Return Allowance

A return of 6.25 per cent was considered fair. The company had presented testimony relating to cost of money and, owing to the fact that neither the staff nor protestants had presented such testimony, contended that the commission was bound by such evidence.

The cost of money, said the commission, was only one factor to be considered in determining a fair rate of return. No evidence on that point could be considered binding on the commission. The commission had considered cost of money testimony in the light of all circumstances.

Refund from Supplier

Upon a subsequent petition for modification of the rate order, evidence was presented that a supplier had refunded moneys to the company, resulting in a reduction in the cost of service. The commission found that it would be unjust to require that any of the amount refunded to the company by the supplier be passed on to the customers by means of a refund. The company had earned very little during the test period in the case.

The commission found, however, that since the cost of service would be reduced by the wholesale supplier's refund, it was proper that the rates be modified to reflect the decrease in the cost of service. An appropriate order was entered. *Re Cumberland & Allegheny Gas Co. Case No. 4313, January 12, 1957.*

Allowance above Cost of Capital for Future Adverse Market Conditions Held Improper

On the issue of rate of return alone, the Pennsylvania superior court reversed the state commission's decision granting a gas rate increase to the Manufacturers Light & Heat Company. The rate of return was held to be excessive to the extent of .2 per cent. In all other respects the commission's action was affirmed. (For a similar case see 16 PUR3d 319.)

The commission had found that the cost of capital to the company was 6.30 per cent. It allowed a rate of return of 6.50 per cent, however, the difference of .2 per cent above the cost of capital being allowed "for possible future adverse fluctuations" in market conditions.

Attrition and Cost of Capital

The court ruled that there was no substantial evidence to support the .2 per cent allowance. There was evidence of a rise in the cost of debt capital, but the commission had considered that element in determining debt capital cost. It had found that 3.60 per cent for current replacement cost of debt "is ample to service the existing commitments and attract new debt money on reasonable current terms." Having once given consideration to the rise in the debt capital market, said the court, the commission could not thereafter give it further consideration to support an allowance above the cost of capital.

There was no evidence that future market conditions would be adverse. In fact, the commission had found in this proceeding that the cost of equity capital was 9 per cent, while shortly before in another rate proceeding by the same company equity capital cost was found to be 9.25 per cent. The commission could not render this downward revision ineffectual by making an upward allowance for unpredictable future changes in such cost. The fact that the commission might have found the cost of capital to be higher, said the court, is no justification for making an additional allowance above the cost of capital.

It was observed that the commission properly rejected the company's claim for an allowance above the cost of capital for attrition of earnings. The factors involved in this item were reflected in the cost of capital and in the allowance for operating expenses.

The court reduced the company's rate of return to 6.30 per cent and ordered a refund of excess amounts collected under the 6.50 per cent rate of return authorized by the commission.

Tax Issues

The company had sought to normalize the effect of accelerated depreciation, claiming that it should be allowed to retain the resulting tax benefits. It had asked the commission to compute its income taxes, for rate-making purposes, by the straight-line method. The court held that the commission properly computed the company's taxes on the basis of the actual tax that would be paid. Congress did not intend as a matter of law that the tax benefits of accelerated depreciation be retained by regulated utilities. As to public utilities, the desire of Congress to provide working capital and funds for expansion through accelerated depreciation is adequately met through the rate-making process, the court stated.

The commission was also sustained in refusing to allow the company to retain the benefits of a consolidated income tax return. The tax was computed on the basis of the actual tax liability of the com-

pany. This action rested upon the fundamental concept that hypothetical allowances are unwarranted in rate proceedings. There is no legal or equitable reason, said the court, for a supplemental return in the guise of an allowance for taxes or other expenses which are not incurred.

Accrued Depreciation and Depletion

When the commission found that the company's book reserve for depreciation and depletion was inaccurate and unreliable (numerous revisions and changes in method had been made over a period of years), it required the company to prepare and submit a reserve requirement study. The city of Pittsburgh contended that the commission erred in using the reserve requirement study and in rejecting the book reserve. Acceptance of the book reserve, being a higher figure than the other, would have had the effect of reducing the rate base and consequently the amount of allowable return.

The commission is not bound to accept any particular method in estimating accrued depreciation and depletion, said the court. They are essentially judgment figures and, if based on substantial evidence, are binding on judicial review. The court noted that the commission has a wide area of discretion with respect to the extent and type of adjustments which it will make to test-year data, and, in determining whether adjustments should be made, it is not bound to accept or reject any particular evidence or make any specific adjustments. *City of Pittsburgh v. Pennsylvania Pub. Utility Commission, 128 A2d 372.*

Certificate to Telephone Co-operative Sustained on Rival Company's Appeal

UPHOLDING a lower court, the Arkansas supreme court ruled that there was substantial evidence to support an order of the commission granting a certificate of convenience and necessity to a co-operative to furnish telephone service in a rural area and denying a conflicting application of a private company.

It was shown that, although the co-operative would charge a higher rate than the private company, it would also serve many more people over a larger territory than the opposing utility. The private company would be able to provide service at a lower rate since it declined to serve a substantial portion of the less populous rural territory.

The court took note of a legislative pronouncement to the effect that service was urgently needed in rural areas and that the federal government had made provision for the financing of co-operatives. *Town of Emerson et al. v. Arkansas Pub. Service Commission et al. 295 SW2d 778.*

Informed Judgment, Not National Policy, Held Basis for FCC Radiotelegraph Decision

ACTING upon standards laid down by the United States Supreme Court, when it vacated a previous decision involving the same parties and subject matter, the United States court of appeals affirmed a Federal Communications Commission modification of a radiotelegraph carrier's license to permit the carrier to maintain direct radiotelegraph service between the United States and certain

foreign countries. The FCC order would result in a duplication of another carrier's existing circuits.

This time, said the court, the FCC had not placed its reliance upon any imagined national policy favoring competition. Instead, it had acted in accordance with its own best judgment, bringing its experience to bear throughout and bolstering its conclusions with factual data, the great weight of which was consonant with the result reached. *RCA Communications v. Federal Communications Commission, 238 F2d 24.*

Corporate Obligation to Continue Passenger Service Overrides Substantial Losses

THE Maryland commission denied a railroad's request for permission to discontinue all passenger train service in one division, notwithstanding that passenger operation was experiencing substantial losses. Projected losses from future operations would be even greater since the federal government had terminated a mail contract. The commission agreed that, with the ever-increasing use of the automobile by the commuting public, the use of the trains in question would continue to decline.

The losses, however, were not the primary factor in the commission's decision. The main consideration was whether a statutory or legal obligation to continue passenger operation vested in the railroad.

In the incorporation of the original company from which the present railroad derived its authority to conduct business, said the commission, there was imposed a duty to transport passengers as well as freight, which amounted to a statutory obligation. The railroad had not been relieved from such obligation.

The commission concluded that, as long as the railroad enjoyed substantial profit from over-all operation, it would not be permitted to abandon its entire passenger service. There was still a public demand and the railroad could not choose to render only that portion of service it found profitable. *Re Western Maryland R. Co. Case No. 5452, Order No. 52590, January 23, 1957.*

Diversity of Patronage at Station

THE Missouri commission denied a railroad's application for authority to change an open agency station to a prepaid station with custodian in charge. Unlike so many other cases, pointed out the commission, this station enjoyed a diversity of patronage, which produced revenues from freight, passenger, express, and telegraph services.

The commission had sustained many applications similar to this where there was little or no patronage of the railroad's services, on the ground that there was no public need for the existing open agency station; that is, little for an agent to do.

In this case, the public not only patronized all the services offered but the revenue paid into the station was very substantial. No motorbus or motor truck common carrier service was available and the public had to depend entirely upon the railroad for all public transportation. The commission concluded that there was a public need for continuance of the open agency station. *Re Chicago, B. & Q. R. Co. Case No. 13,472, January 21, 1957.*

Complex Territorial Problems Posed by Commission after Certificating Co-operative

THE Colorado commission, after holding it had jurisdiction to pass upon an electric co-operative's application for a certificate of public convenience and necessity and complaint alleging two electric companies had encroached upon its service area, attempted to unravel a territorial dispute that had reached facility-duplication proportions. The commission concluded that it would be unwise, at present, to set up homogeneous territories and order each of the parties to remove facilities and give up investment in the other's territory. A procedural door was left ajar, however, with the expectation that the parties would co-operate in adjusting differences.

Certification of Co-operative

Any party can become a certificated public utility, pointed out the commission, if it meets certain qualifications. These are: legal, financial, moral, and physical qualifications to serve; willingness to serve indiscriminately, and to the extent of capacity, all members of the public who demand service and are willing to comply with reasonable regulations; and that the proposal is economically feasible.

The co-operative met all of these formal requirements. Its certificate of incorporation had been amended to authorize service to the general public. It was in sound financial condition. Although the utilities might not take kindly to some of its raiding tactics, the commission commented, the co-operative also complained of some of the practices of the utilities. The co-operative had not strayed so far from the right as to be morally disqualified to become a public utility.

The physical plant was clearly sufficient to the needs of present customers. The co-operative had been operating sixteen years. By changing its charter and making public application for utility status, it had demonstrated willingness to serve the public to the extent of its capacity.

Possibility of Future Difference Of Treatment

A question was raised whether the holding out to serve the public indiscriminately was affected by a bylaw provision that nonmember consumers had no interest in the profits or assets of the corporation. The commission did not believe that the mere possibility of some future difference of treatment as to cash distribution of profits, which was within its power to prevent, was sufficient ground for denying utility status.

Antiduplication Further Justification

The parties had engaged in construction races, overbuilding, duplication of lines, and intermingling of services. All had agreed that these conditions were undesirable and contrary to the general public good.

The commission pointed out that it did not have authority over distributors of electric energy unless such distributors were public utilities. The public interest in eliminating wasteful duplication of facilities in the disputed area, and in assuring orderly and economical future development of the area, was a further factor justifying the certification of the co-operative as a public utility.

Effective Date of Utility Status

The effective date the co-operative attained utility status was of primary importance in this case because, as of that date, the co-operative became entitled to

have facilities protected against invasion. The co-operative's claim rested entirely upon the assertion that it had never refused membership to anyone, although it conceded it could have.

The assertion alone did not constitute a holding out to serve the public, nor did the act of changing the charter, it was held. The latter was a private act, taken within the corporation. At most, it only authorized the corporation to serve the public; it did not require such service. There being no evidence of a declaration or other public holding out to serve, the commission relied on the fact of serving as evidence of the intention, and fixed the date accordingly.

Assignment of Exclusive Service Territory

The other two utilities had proceeded vigorously to make new large blocks of power available for industrial expansion in the area, and to build expensive high voltage transmission facilities in advance of the critical day of need. The co-operative contended that the commission, when considering its qualification to serve the area desired, should consider the other company's power facilities as available to it.

The commission refused to commit millions of dollars in generating plant so that the co-operative could use the resulting power to deprive the company of a part of the territory it served. The co-operative was held to have failed to show that public convenience and necessity required that it be assigned an exclusive service territory, or that the public would benefit at all from such an assignment.

Removal of Encroaching Facilities

The co-operative was required to remove existing lines in some areas. Although it may seem a harsh rule, said the commission, the co-operative entered the areas with eyes open. All were certificated by public proceedings before the co-operative entered. The co-operative appeared to be blowing hot and cold. It asked to have a certificated area set aside for it, at the expense of certificated areas of others, without showing cause, other than its own desire, for breaching the security of existing certificated areas.

The order for removal was conditioned upon the existing utilities filing statements with the commission that they were actually serving the area; that they were willing to commence service to customers affected by the order without interruption of service, and without extension or connection charge of any sort, other than the standard meter deposit requirement.

Redistribution Unfeasible at Present

The commission believed that it would be contrary to the public interest to attempt by order to redistribute lines and customers of the various parties. Evolution would serve the public better than revolution in this matter. It was not certain that the receiving utility would consent to serve, or could be compelled to serve, or indeed be economically able to serve, the redistributed customers. Disruption of service would almost inevitably result.

Industry and commerce were coming into the area, requiring new capital commitments by one or the other of the parties, and making the situation even more confused and difficult to solve. A method of accomplishing the desired result other than the imposed mandate of the commission had to be found. The commission felt that holding the parties in approximate status quo for a time would accomplish the desired ends with minimal dislocation and maximum benefit to the public and the parties.

Dissenting Opinion

Commissioner Thompson dissented. Though his area of difference was small, he felt it vital to the whole problem. It appeared to him that by treating the vastly different parties as though they were equals his colleagues had hurt all the parties, compounding instead of solving the problem. When it came to heavy jobs, he felt, a good heavyweight would always lick a good bantamweight. Wishing that the parties were equals would not make that so.

In sixteen years of unrestricted operations, the largest single load the co-operative had ever acquired was 160 kilowatts. It never had served large loads; it was not capable of serving them now. Yet the majority, while stating that only the electric company was capable of serving large loads, required it to file on all new loads, regardless of size, outside of a small certificated area, subject to protest by the co-operative. The commissioner felt the majority's action raised a grave risk of stopping the area's growth. *Re Union Rural Electric Asso., Inc. Application No. 13576, Case No. 5108, Decision No. 47074, January 7, 1957.*

Railroad Not Allowed to End Substitute Bus Service Despite Continued Losses

NOTWITHSTANDING a considerable operating loss, the New Jersey supreme court affirmed a commission order denying permission to a railroad company to discontinue its motorbus service between intrastate points, furnished in place of passenger train service previously discontinued. The company failed to show that there was adequate alternative transportation.

The earlier discontinuance of the passenger trains and the substitution of buses in their place reduced the annual deficit for the service from $18,000 to approximately $7,000. But in view of the continued loss, the company sought to discontinue the service altogether.

The court recognized that a railroad could not constitutionally be compelled to furnish service, even over a branch line, at a pecuniary loss when the service is not required by public convenience and necessity.

But the mere showing of a loss does not of itself establish a right to discontinue common carrier service. Other factors must be considered, including the extent to which the public uses the service and the availability and adequacy of alternative facilities. In weighing the relative importance of the loss and the factors indicative of public necessity and convenience, said the court, primary consideration must be given to the latter.

Interstate Passengers

An average of twelve passengers for each trip used the bus service, and of the twelve, eight were on interstate journeys. Urging that the commission had no authority to regulate interstate transportation, the company contended that the interstate passengers should not be considered in determining public necessity. The court observed that this contention had been rejected in an earlier case.

The Few Considered as Well as The Many

The argument was advanced that, in balancing public necessity against the company's financial loss, the consideration should be that of the general public rather than of relatively few passengers. The

court indicated that public convenience lies in adequate service to the few as well as the many. It is for the commission to weigh the relative needs of passengers against all other factors, and unless its determination is unwarranted in law or unsupported by evidence, it will not be disturbed by the courts.

For some of the passengers there would be no alternative transportation at all if the bus service were withdrawn, and for others only a very inadequate alternative service would be available. The court concluded, with the commission, that the public convenience and necessity required continuance of the existing service. *Re Central R. Co. of New Jersey, 127 A2d 436.*

Court Modifies Order Imposing Local Taxes on Local Telephone Subscribers

THE Virginia commission, in Re Chesapeake & Potomac Telephone Company of Virginia, 12 PUR3d 1, 517, authorized the company to pass local taxes or other exactions to subscribers in the political subdivisions imposing them. The order was subject to the limitation that such charges should so be billed if their aggregate amount exceeds one-half of one per cent of the aggregate bills of such customers for exchange service. The state supreme court has upheld the commission's view as to local imposition of such charges but has modified the order to limit its scope to impositions exceeding one-half of one per cent of the aggregate bills.

Justification for Local Billing

Subsequent to an earlier order approving local billing for the cost of a license tax based on gross receipts, the city of Newport News adopted an ordinance imposing a flat annual license tax of $30,000, which was about the same amount as would be realized from a 3 per cent tax on gross receipts formerly in effect. Other cities had taken action to impose similar burdens.

The court recognized the authority of cities to impose such taxes or fees, but it also sustained the authority of the commission, in fixing reasonable and just rates, to impose on local subscribers taxes paid by the company to a locality. The court said that if a locality can levy taxes that are paid mostly by people who do not live and vote there, self-interest will persuade it to rely on such taxes for the support of local government.

The only practical limitation on the taxing power lies in the restraint exercised on the taxing authorities by those who elect them to office. It is unfair, the court continued, to allow a municipality to collect from the telephone company a very high tax which would in large part be paid by telephone users in other parts of the state. It is reasonable and just, in order to prevent this, to allow the company to charge the tax back to the customers in the political subdivision imposing it if it exceeds a fixed rate.

Modification of Rule to Avoid Discrimination

Although the court said that the reasoning of the commission (12 PUR3d 517) refuted a charge that the action of the commission was arbitrary and without evidence to support it, the order should not provide that the tax or fee would be billed to exchange customers "if the aggregate amount thereof exceeds one-half of one per cent of the aggregate bills of such customers."

The corollary, said the court, is that if

the aggregate amount of such taxes and fees does not exceed one-half of one per cent, it will not be billed to the exchange customers but the company must pay it. In other words, if one political subdivision charges the company a tax which does not exceed one-half of one per cent, the company pays it; but if another political subdivision charges more than one-half of one per cent the exchange customers pay the whole bill.

The order, the court continued, thus puts a penalty on a political subdivision which imposes a tax greater than the fixed maximum, whereas all other political subdivisions which do not exceed the fixed maximum suffer no such penalty. This result was said to be inconsistent with the stated purpose of the commission to keep the order from interfering with the sort of moderate taxes and fees that had been levied for the past half century.

The order was therefore modified to provide that when a political subdivision imposes such a tax "so much of the aggregate amount of such taxes and fees as *exceeds* one-half of one per cent of the aggregate bills of such customers for exchange service" will be billed pro rata to them. *City of Newport News v. Chesapeake & P. Teleph. Co. of Virginia, Record No. 4625, January 21, 1957.*

State Commission Cannot Regulate Oil Pipeline Devoted to Interstate Flow

THE Kansas supreme court ruled that Kansas statutes relating to the regulation of public utilities and common carriers did not apply to oil pipelines operated solely in interstate commerce. The state, on the relation of the attorney general and the commission, sought by mandamus to compel oil pipeline companies to secure authority from the commission before one company sold and another bought some crude oil pipelines operated in the state.

Crude oil pipelines within the state were declared by statute to be common carriers, and the legislature conferred authority upon the commission to regulate such pipelines.

According to the petition (taken for true on motion to quash), oil was transported from Kansas wells to Humboldt, Kansas, where it was placed in tanks and then introduced into a trunk line and carried out of the state. The court was of the opinion that the transportation, begun at the well, was continuous to the point of destination outside the state. The stay in the tank at Humboldt, the court indicated, could not be said to break continuity.

Since the transportation was exclusively interstate, the commission had no power to regulate it. The commission's statutory authority to regulate public utilities and common carriers doing business in the state, said the court, does not include the power to directly regulate or burden interstate carriers. Any attempt on the part of state authorities to regulate interstate business would violate the federal Constitution.

No Common Carrier Transportation

Nor did the transportation of oil from the wells to Humboldt by pipeline constitute a common carrier operation. The company concerned purchased oil at the wells and transported only its own oil. To constitute one a common carrier there must be a holding out to the public generally. Therefore, on this ground, also, the commission had no jurisdiction. *Kansas ex rel. Fatzer et al. v. Sinclair Pipe Line Co. et al. 304 P2d 930.*

Regulated Competition Favored over Sight-seeing Monopoly

THE holder of authority contained in a certificate of public convenience and necessity petitioned the Colorado commission for enlargement of its operating rights to include the use of multipassenger buses in sight-seeing between certain points. Present authority restricted the applicant's operations to limousines.

The company contended that the use of limousines in sight-seeing service was no longer acceptable to the public. Before the advent of good roads, limousines were regarded as the most suitable conveyance for sight-seeing transportation. Today, sight-seers desire glass top buses, which are particularly adaptable to such service.

Another carrier holding similar authority but allowed to use motorbus equipment, the applicant claimed, would eventually obtain a complete monopoly in the sight-seeing business originating from the area. The commission agreed, and held that a monopoly was not intended by the granting of the original sight-seeing authorities. The commission at that time favored regulated competition. The present commission was in accord with that theory.

Public convenience and necessity required the granting of the application. The commission had, during its regulatory history, endeavored to protect certificated common carriers by making it possible for them to give to the public the best possible service. The applicant had operated a sight-seeing service for approximately thirty years. If it was to continue successful operation, restrictions against multibus equipment had to be removed to make the service attractive.

Railroads have found it necessary to improve passenger trains. *Re Checker Cab Co. Application No. 14612, Decision No. 47058, December 31, 1956.*

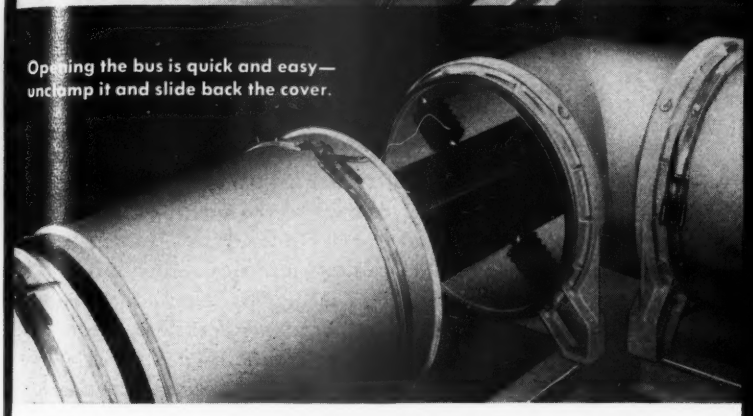
Other Recent Rulings

Discriminatory Transfer Charge. The Connecticut commission, although approving a transit company's application for a general fare increase, denied a requested transfer charge that would have resulted in unfair discrimination against some patrons, even though the company might continue to operate at a deficit. *Re City Bus Lines, Inc., of Torrington, Docket No. 9379, January 17, 1957.*

Evidence Inadmissible. The Federal Power Commission sustained a presiding examiner's rejection of evidence offered by a natural gas company as rebuttal evidence in a rate proceeding, since the evidence went to the fundamental issues and would have entailed a reopening and extension of the case had it been accepted. *Re Natural Gas Pipeline Co. Docket No. G-3123, January 15, 1957.*

Debentures at 5½ Per Cent. Considering present money market conditions, the New Mexico commission expressed the view that 5½ per cent was not an unreasonably high interest rate on a substantial issue of 20-year sinking-fund debentures which it authorized a gas company to issue for private placement, the proceeds to be applied to the payment of short-term bank loans and the financing of construction. *Re Lea County Gas Co. Case No. 485, January 25, 1957.*

Delta-Star Telescoping-Cover Bus features fast, economical installation.



Opening the bus is quick and easy—unclamp it and slide back the cover.

Clamping ring with toggle and spring mechanism applies moisture-proof seal.

When you're thinking about cost reduction, check Delta-Star's Telescoping-Cover Bus

From installation to maintenance you reduce time and costs with Delta-Star's telescoping-cover isolated phase bus.

Installation is greatly simplified—for speed and economy. Longitudinal sections 6 to 8 ft. long can be pre-assembled and delivered in lengths as large as your facilities can handle. Telescoping covers clamp into position—are locked together with a toggle and spring clamping mechanism—no bolts needed. Clamping rings with fully-trapped, self-sealing neoprene gaskets make the bus as water-proof as it is possible for a gasketed bus to be. Gasketing is at a minimum—no longitudinal gaskets required.

Telescoping-cover bus sections can be opened and inspected without tools —*in just a few minutes.* A 2 ft. 6 in. opening allows ample room for inspection and cleaning.

Current-carrying ability and minimum-heating characteristics of the telescoping-cover bus proved out very well in tests and in use.

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Compact rugged Cleveland's smooth crawler mounting real public relations asset in 70,000′ tough digging

The light weight, hi-tensile alloy steel construction and smooth crawler mounting of this Cleveland 92 "Baby Digger" enabled Rich & Co., Bradford, Pa. to cut 70,000 feet of trench in stony tough digging without causing damage to the sidewalks and fine old lawns in and around Groton, N. Y. The compact design and quick-and-easy maneuverability of the 92 were other big helps in digging these 4-inch pipe gas mains and laterals for New York State Electric and Gas Co., Ithaca, N. Y. The rugged 92 weighs only 10,000 pounds, is only 4½ feet wide over its crawlers, yet digs 10 to 20 inch trench widths and down to full 5 feet deep—in *all* soils.

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Industrial Progress

Westinghouse to Supply Ohio Edison With Two Generators For New Plant

OHIO Edison Company has awarded a $9,250,000 contract to Westinghouse Electric Corporation for two turbine-generator units for the utility's new Stratton, Ohio power plant.

A. C. Monteith, Westinghouse vice president in charge of apparatus products, said that the company will supply two 170,000-kw units to double the scheduled capacity of the plant that is now under construction on the Ohio river.

Scheduled for operation in 1960 and 1961, the additional units will make the Stratton plant the largest power producer in the Ohio Edison system.

Two generating units, each with 170,000-kw capacity, were scheduled for the new plant when ground was broken last May. However, business growth has indicated that additional generating capacity will be needed earlier than originally expected, Walter H. Sammis, president of Ohio Edison, said recently when announcing the expansion plans. The move to enlarge facilities now under construction will increase the total cost of the power plant from $62,000,000 to $116,000,000.

Central Pwr. & Light Plans $125,000,000 Program

CENTRAL Power and Light Company has announced plans to spend an estimated $125,000,000 during the next five years for the construction of new electric facilities in South Texas.

President J. L. Bates, speaking at the company's annual Management Conference, said the expansion plans were based on a recently-completed economic forecast which indicates that South Texas will double its use of electricity by 1961.

Most of the proposed five-year outlay will go for the construction of power plants, new transmission lines and expanded distribution facilities.

New generating units for CPL power plants are expected to cost over $45,000,000 and will almost double the company's system generating capability by 1961. Construction is already underway on CPL's new J. L. Bates power station at Mission, which will be ready for service by early 1958. Initial generating capability at this plant will be 75,000 kilowatts.

CPL plans to spend almost $44,000,000 during the next five years for the construction and improvement of distribution facilities. Another $25,000,000 has been allocated for building new high voltage transmission lines, which connect CPL power plants and load centers. The remainder of the planned expenditure will be used primarily for the construction and improvement of CPL offices and other facilities.

M. H. Lovelady, CPL vice president and chief engineer, said the new company expansion plan calls for the installation of a 175,000-kilowatt turbo-generator in 1959, and a 110,000-kilowatt generating unit in 1960. Another 110,000-kilowatt generating unit is expected to be ready for service by 1961. The exact location of the latter three units has not yet been determined.

PG&E to Double Pittsburg Plant

PACIFIC Gas and Electric Company plans to invest $83,200,000 to double the size of its new Pittsburg power plant.

Two generating units, 325,000 kilowatts each, twice as large as the largest now in service on the PG&E system, will be added to the present 660,000 kilowatt capacity of the plant.

The design also calls for the highest temperatures and the greatest pressures yet installed in a PG&E plant and the plant's gross normal operating capacity of 1,310,000 kilowatts would make it one of the few in America with capacity in excess of a million kilowatts.

The new units, with boilers using oil or natural gas, are designed for 1,050 degrees temperature and 2,400 p.s.i. pressure. They will be outdoor types, similar to the ones now in service at Pittsburg.

Pittsburg power plant, completed in 1954, presently is the largest steam plant in the West. It has four 165,000-kilowatt units fueled by oil or natural gas. They operate at temperatures of 1,000 degrees Fahrenheit, and pressures of 1,800 pounds per square inch. With transmission facilities, they represent an $80,000,000 investment. The new units will make the enlarged plant represent an investment of $163,200,000.

PG&E said that the first new unit would be needed in service in 1960 and the second in 1961 to meet future load growth and to maintain a reasonable reserve capacity.

Columbia Gas to Spend $87,000,000 on Expansion

COLUMBIA Gas System, Inc., has planned a 1957 construction program costing $87,000 000, George S. Young, president, stated in the Company's 1956 annual report. Columbia spent $61,700,000 in 1956 for new facilities and replacements.

Four Gas Utilities Named As Servel Distributors

APPOINTMENT of four gas companies as utility-distributors for Servel gas refrigerators was announced recently by E. A. Nash, general sales manager of the Home Appliance Division of Servel, Inc.

The four utilities are the Montana-

(*Continued on page* 30)

Dakota Utilities Company, with headquarters in Minneapolis, Minn.; Western Kentucky Gas Company, Owensboro, Ky.; Central Indiana Gas Company, Muncie, Ind., and Iowa-Illinois Gas & Electric Company, Davenport, Iowa.

In each case the utility-distributors will be responsible for the sales and service of Servel gas refrigerators in communities served by the gas lines of the respective companies.

The trading areas served by the Montana-Dakota Utilities Company include 13 counties in northern and eastern Montana, four counties in northern Wyoming, 13 counties in western and central North Dakota, five counties in northwestern South Dakota, and Polk county in Minnesota. R. T. Bennett is sales manager of the company.

The territory served by the Western Kentucky Gas Company includes 26 counties in the western half of the state. R. D. Williams is the company's sales and advertising manager.

Seven counties in the east central section of Indiana have been assigned to the Central Indiana Gas Company, of which A. E. Hatley is vice-president in charge of sales.

Linn and Wapello counties in Iowa are included in the Iowa-Illinois Gas & Electric Co. territory. G. W. Ames is director of sales for this utility.

Gas companies previously appointed as utility-distributors by Servel include the Lone Star Gas Company, Dallas, Tex.; Houston Natural Gas Company, Houston, Tex.; Minneapolis Gas Company, Minneapolis, Minn.; Philadelphia Gas Work Division of the United Gas Improvement Co., Philadelphia, Pa., and Iroquois Gas Corporation, Buffalo, N. Y.

San Diego Gas & Elec. to Build $25,000,000 Unit

ANTICIPATING a continuance of the same growth pattern which has been experienced during the past ten years in the area served by San Diego Gas & Electric Company, the board of directors recently authorized the construction of the first electric generating unit at its South Bay power plant, E. D. Sherwin, president, has announced. This first unit will have a generating capability of 135,000 kilowatts which will be one fourth greater than that of the largest unit now on the system. It is scheduled to be in operation in 1960. Construction will start in the latter part of 1957 and will involve a total investment of $25,000,000.

At present San Diego Gas & Electric Company has a total generating capability of 566,000 kilowatts. When Unit No. 3 at the Encina power plant is completed in 1958 generating capability will be increased by 106,000 kilowatts to a total of 672,000 kilowatts. The newly authorized South Bay power plant unit will increase the total to 807,000 kilowatts in the fall of 1960.

Cincinnati Gas & Electric Has $39,000,000 Program

CINCINNATI Gas & Electric Company reports that construction expenditures for 1957 are budgeted at $39,000,000. This compares with $24,000,000 spent in 1956.

Dr. Lee Davenport to Head Sylvania-Corning Nuclear Corp.

DR. Lee L. Davenport has been appointed to an executive post with Sylvania Electric Products, Inc. and will become president of Sylvania-Corning Nuclear Corporation upon its formation in the near future, it was announced recently by W. Benton Harrison, Sylvania vice president, who has over-all responsibility for the company's atomic energy activities.

Dr. Davenport, formerly executive vice president of The Perkin-Elmer Corporation, Norwalk, Conn., will have his offices at Sylvania's Atomic Energy Division headquarters in Bayside, Long Island.

Sylvania-Corning Nuclear Corporation, which Dr. Davenport will head, is being formed as a jointly owned company by Sylvania and Corning Glass Works for expanded research, development and production activities in the atomic energy field. The proposed new company, which was announced recently, will take over the two companies' atomic energy businesses, thus acquiring Sylvania's extensive background in metallurgy and Corning's leadership in ceramics. Pending formation of the new company, Sylvania took options in December on a 150-acre site in

(*Continued on Page 32*)

This announcement does not constitute an offering. The offering is made only by the Prospectus, which may be obtained from such of the undersigned as are registered dealers in this State.

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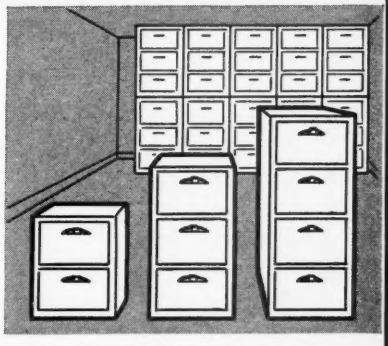

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Andover, Mass., as the proposed location for a new multi-million-dollar atomic center.

Sylvania's Atomic Energy Division is one of the leaders in the development and fabrication of fuels for atomic reactors, reactor components, and materials. Corning is recognized as a leader in the development and manufacture of glass and refractory products for many applications throughout industry. The company is engaged in applying high-temperature ceramic techniques to the manufacture of nuclear fuel elements and related components.

Plans Shaping Up for 1957 Coal Show

PROGRAM arrangements for the 1957 Coal Convention and Exposition of the American Mining Congress, scheduled for May 13-16 at the Cleveland Public Auditorium, are moving forward under the direction of a national committee chairmanned by A. R. Matthews, president of Pittsburgh Consolidation Coal C Sessions will feature consideration continuous mining, conventional mi ing, coal preparation, managemer safety, and other topics of importan to the industry. Advance registratio indicate the Coal Show will aga draw thousands of mining men fro this country and overseas. Th AM urges early reservations and a nounces that all hotel reservations a being handled by The Cleveland Housing Bureau, 511 Termin Tower, Cleveland 13, Ohio.

This announcement is neither an offer to sell nor a solicitation of an offer to buy any of these Debentures. The offer is made only by the Prospectus.

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Convertible on and after June 1, 1957 until maturity, unless previously redeemed, into Common Stock of the Company at $45.45 per share, subject to adjustment in certain events.

Holders of the Company's outstanding Common Stock are being offered rights to subscribe for the above Debentures at the rate of $100 principal amount of Debentures for each 25 shares of Common Stock held of record on February 25, 1957. Subscription Warrants will expire at 3:30 P.M., Eastern Standard Time, on March 15, 1957.

Subscription Price 100%

The several Underwriters have agreed, subject to certain conditions, to purchase any unsubscribed Debentures and, both during and following the subscription period, may offer Debentures as set forth in the Prospectus.

Copies of the Prospectus may be obtained from only such of the undersigned as may legally offer these Debentures in compliance with the securities laws of the respective States.

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February 28, 1957.

First Atomic Reactor Started U And Shut Down 10,000 Time

THE first atomic reactor ever ope ated in the northeastern Unite States has been started up and sh down a record 10,000 times for e perimental purposes, a General Ele tric Company scientist reported r cently.

Dr. H. B. Stewart of the Knol Atomic Power Laboratory (KAPL staff, said that the Preliminary Pi Assembly (PPA) at KAPL also " believed to have produced more i formation about a larger variety reactors than any other assembly PPA has been operated successful for eight and one-half years.

So far, he reported, several co pletely different types of reactor d sign have been simulated in the pi neer assembly, constructed by Ge eral Electric scientists and enginee for the solution of nuclear physi problems likely to be encountered later reactor construction.

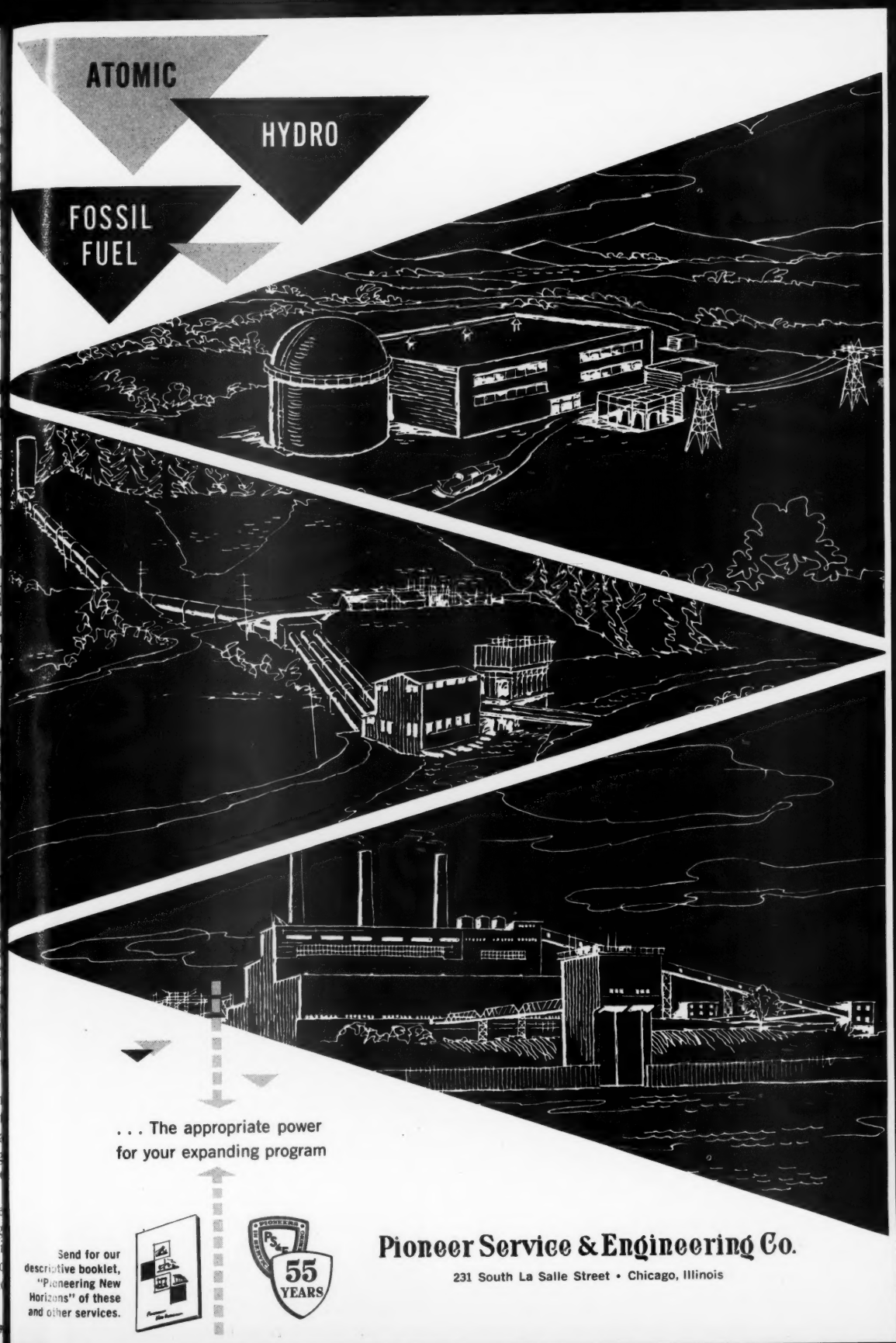
KAPL is operated by Gener Electric for the Atomic Energy Co mission.

Scientists and engineers there ha designed and constructed reactors f the prototype power plant for t submarine Seawolf and the actu Seawolf power plant. Currently th are designing the Submarine A vance Reactor for use in the world largest submarine, the Triton, no under construction.

PPA, which can be shut down an restarted in 15 minutes to facilita rearrangement of fuel elements, h simulated the performance of a larg variety of reactors, Dr. Stewart r ported.

This has been accomplishe through relatively simple desig modifications of the fuel elements one or both of the hexagonal reacto tube bundles, Dr. Stewart explaine

(Continued on page 34)



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The design of the PPA, which is one of five experimental reactors in use at KAPL, was originally conceived and built by Dr. Thoma M. Snyder and a group of scientists at KAPL in 1948.

Five Outstanding Scientists and Engineers Added to Task Force On Nuclear Power

FIVE outstanding scientists and engineers have been appointed to and have been serving on the Technical Appraisal Task Force on Nuclear Power of the Edison Electric Institute, according to James F. Fairman, Chairman of the Task Force. They are:

Robert F. Bacher, Director, Norman Bridge Laboratory, California Institute of Technology

Marion W. Boyer, Director, Standard Oil Co. (New Jersey)

Augustus B. Kinzel, Vice President-research, Union Carbide & Carbon Corp.

Henry D. Smyth, Chairman, Board of Scientific Engineering Research, Princeton University

Harry A. Winne, retired Vice President - engineering, General Electric Co.

Previously announced members of the Task Force are:

James B. Black, Board Chairman, Pacific Gas and Electric Co.

Walker L. Cisler, President, The Detroit Edison Co.

James F. Fairman, Vice President, Consolidated Edison Company of New York, Inc.

Herbert J. Scholz, Board Chairman, Southern Services, Inc.

Philip Sporn, President, American Gas and Electric Co.

William Webster, Executive Vice President, New England Electric System

The Task Force was organized last September to:

(1) review the progress of research and development of competitive nuclear power;

(2) study and report on all power reactor programs and projects;

(3) study and appraise the technical and economic factors and the results to be achieved by the design a construction at different times prototype or full-scale nuclear pow plants;

(4) act as a liaison group with t members of any nuclear reactor ev uation group that may be set up a national level.

"The findings of the Task For will be presented to the Board of D rectors of the Edison Electric Ins tute, to whom the Task Force r ports, and will be available to all w are interested in the development nuclear power," Mr. Fairman said.

G-E Announces New Line Two-Step Phase Distance Rela

A NEW line of two-step phase di tance relays for use on electric utili sub-transmission and distributi lines has been announced by the Ge eral Electric Company's Low Volta Switchgear Department.

Called the Type GYC relays, ea unit contains two basic parts: a mh type phase distance measuring devi and a time overcurrent relay.

The distance measuring unit pr vides instantaneous tripping of pha

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S & C Bulletin

& C ELECTRIC Company has ised an informative bulletin which disisses basic schemes used in the imary fusing of parallel-connected ower transformer banks, the factors nsidered in determining the adntages or disadvantages of each heme, and steps to follow under each heme in the selection of fuses.

Copy of the bulletin (No. 203) may e obtained from S & C Electric Comany, 4435 Ravenswood avenue, Chiago 40, Illinois.

G-E Issues Bulletins On Two-way Radio Selective-Calling

ENERAL ELECTRIC'S Communication Products Department, Syrause, N. Y. has published two bulletins n two-way radio selective-calling.

ECR-448 describes "Individual all," which enables an operator to rn down radio volume until he reives a light or buzzer signal indicatg an incoming call.

ECR-439 explains "Group Call", howing how a radio-equipped fleet ay be sub-divided into as many as n different groups according to job unctions, by types of vehicles, or by cations served. With "Group Call" is possible for the user to communiate instantly with a specific sub-diided group without affecting other nits in the fleet.

Flynn Heads Utilities at AMP

OSEPH P. FLYNN has been amed manager of the public Utilities ivision for AMP Incorporated acording to an announcement by G. Earle Walker, vice president in charge of sales.

In commenting upon the appointment Mr. Walker stated that "Mr. Flynn is eminently fitted for his new work by a background in the public utilities field prior to joining AMP in 1946. In addition to his technical work as staff sales engineer he has functioned as sales promotion manager of the company and worked closely with power companies and manufacturers of special electronic equipment."

AMP Incorporated — formerly known as Aircraft Marine Products —established sixteen years ago is one of the nation's industrial suppliers specializing in developing and producing solderless devices and the tools with which to apply them.

B&W Expanding Research Center At Alliance, Ohio

PLANS to expand The Babcock & Wilcox Company's Research Center in Alliance, Ohio, were announced recently by Paul R. Grossman, Research Center director.

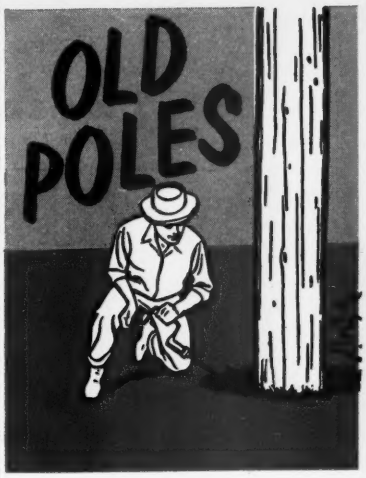
An "L"-shaped building will be erected at the center to keep pace with growing nuclear engineering research activities being carried out by the company, according to Mr. Grossman. Reflecting the steady increase in other research projects, a two-bay addition will be made to the mezzanine of an existing structure, he said. The new "L" building, containing 15,700 square feet of floor area, will be located east of the present office building.

H. Zinder & Associates Opens New York Office

H. ZINDER & Associates, Inc., consulting firm to natural gas and oil production companies, gas transmission and distribution companies and to electric utilities has opened a New York office in the Chanin building at 122 East 42nd street, it was announced by H. Zinder, President.

H. Zinder & Associates now maintains offices in Washington, D. C., Dallas and Houston, Texas, Seattle, Washington and New York City.

Along with the announcement of the New York office, Mr. Zinder announced that Benjamin Miller has become associated with the firm and will be located in New York. Mr. Miller has been engaged in independent consulting work since 1945. Prior to his consulting work, Mr. Miller was associated with the Cities Service Organization working on the development of long distance, high pressure natural gas pipelines.



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A

Abrams Aerial Survey Corporation 41
*Allen & Company .....
*Allis-Chalmers Manufacturing Company .....
American Appraisal Company, The 34
*American Creosoting Corporation .....
*American Telephone & Telegraph Company .....
Analysts Journal, The 36

B

Babcock & Wilcox Company, The 4-5
Black & Veatch, Consulting Engineers 38
*Blyth & Company, Inc. .....

C

Carter, Earl L., Consulting Engineer 41
Cleveland Trencher Company, The 28
Coates Field Service 41
Columbia Gas System, Inc., The 13
Combustion Engineering, Inc. 22-23
Commonwealth Associates, Inc. 20
Commonwealth Services, Inc. 20
Consolidated Gas and Service Company 41

D

Day & Zimmermann, Inc., Engineers 38
Delta-Star Electric Division, H. K. Porter Company, Inc. 27
*Divco Corporation .....
Dodge Division of Chrysler Corp. 18
Drake & Townsend, Inc. 38
Dresser Industries, Inc. ..... Outside Back Cover

E

*Ebasco Services Incorporated .....
Electro-Motive Division, General Motors 16-17

F

First Boston Corporation, The 32
Ford, Bacon & Davis, Inc., Engineers 38

G

Gannett Fleming Corddry and Carpenter, Inc. 41
General Electric Company ..... Inside Front Cover
Gibbs & Hill, Inc., Consulting Engineers 38
Gilbert Associates, Inc., Engineers 38
Gilman, W. C., & Company, Engineers 39
Glore, Forgan & Company 30

H

Haberly, Francis S., Consulting Engineers 41
*Halsey, Stuart & Company, Inc. .....
*Harriman, Ripley & Company .....
Hirsch, Gustav, Organization, Inc. 39
Hoosier Engineering Company 39

I

*International Business Machines Corp. .....
*International Harvester Company, Inc. .....
Irving Trust Company ..... Inside Back Cover

J

Jackson & Moreland, Inc., Engineers 41
Jensen, Bowen & Farrell, Engineers 39

K

*Kellogg, M. W., Company, The .....
Kerite Company, The 37
*Kidder, Peabody & Company .....
*Kuhn Loeb & Company .....
Kuljian Corporation, The 39

L

*Langley, W. C., & Co. .....
Leffler, William S., Engineers Associated 39
*Lehman Brothers .....
*Loeb (Carl M.) Rhodes & Co. .....
Loftus, Peter F., Corporation 41
*Lougee, N. A., & Company, Engineers .....
Lutz & May Company, Consulting Engineers 41

M

*Main, Chas. T., Inc., Engineers .....
*Matthews, Jas. H., & Company .....
McCabe-Powers Auto Body Company 7
*Merrill Lynch, Pierce, Fenner & Beane .....
Middle West Service Company 40
Miner and Miner 41
*Morgan Stanley & Company .....
Morysville Body Works, Inc. 34
Motorola Communications & Electronics, Inc. 19

N

*National Association of Railroad & Utilities Commissioners .....
Newport News Shipbuilding & Dry Dock Co. 24
*Nuclear Development Associates, Inc. .....

O

Osmose Wood Preserving Co. of America, Inc. 35

P

*Pacific Pumps, Inc. .....
Parkersburg Rig & Reel Company, The 15
Pioneer Service & Engineering Company 33, 40

R

Recording & Statistical Corporation 11
Remington Rand Div. of Sperry Rand Corp. 9
Robertson, H. H., Company 21

S

Sanderson & Porter, Engineers 40
Sargent & Lundy, Engineers 14, 40
Schulman, A. S., Electric Co., Engineers 41
*Smith, Barney & Company .....
*Sno-Cat Corp. of N. H. .....
*Southworth Brush Cutter .....
*Sprague Meter Company, The .....
Stone and Webster Engineering Corporation 40
Sverdrup & Parcel, Inc., Engineers 41

T

*Texas Eastern Transmission Corporation .....

U

*Union Securities Corporation .....

W

*Western Precipitation Corporation .....
*Westinghouse Electric Corporation .....
White, J. G., Engineering Corp., The 40
*White, Weld & Co. .....
Whitman, Requardt and Associates 40
*Wright Power Saw and Tool Corporation .....

Y

Yawman and Erbe Mfg. Co. 31

Professional Directory 38-41

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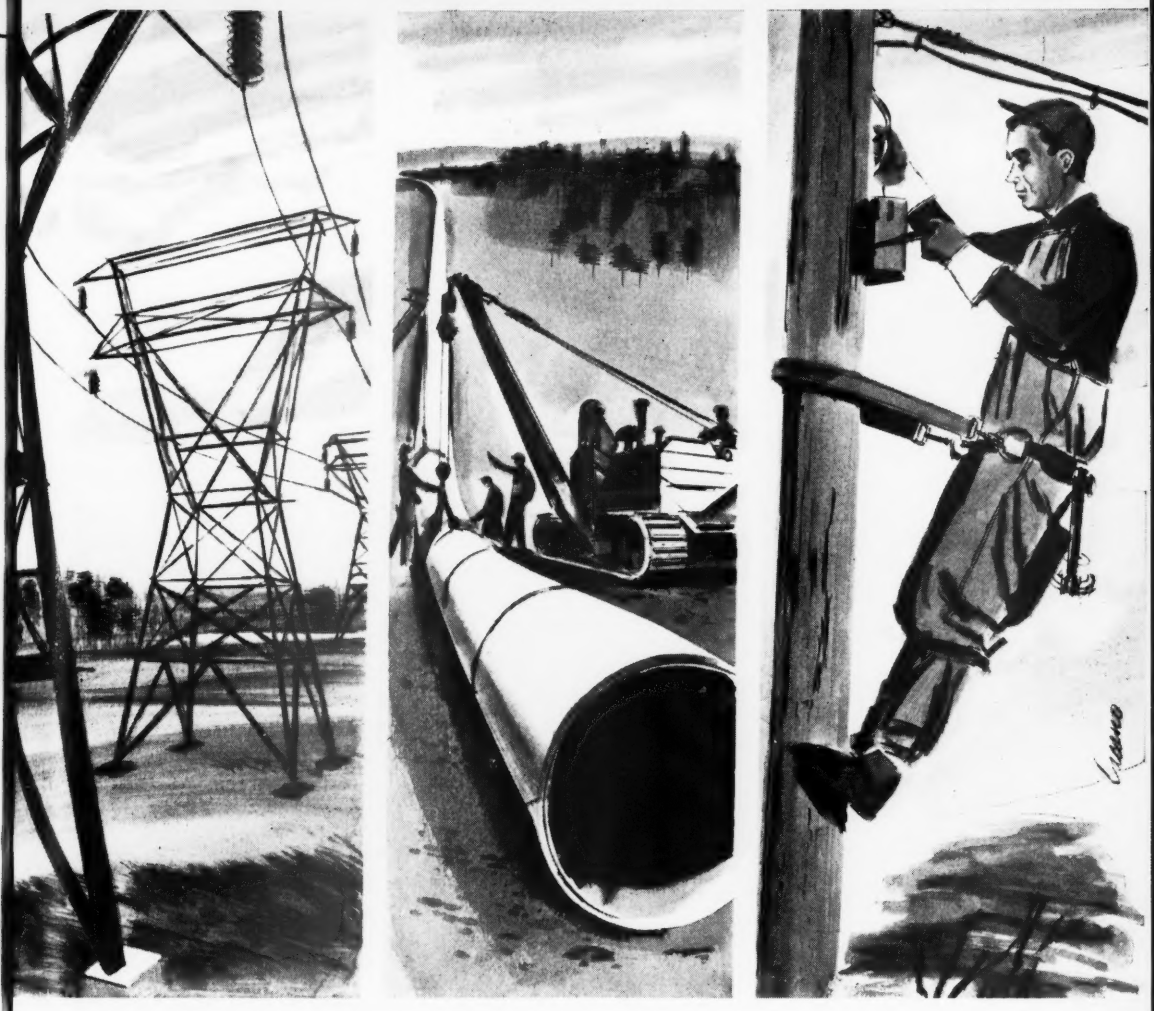

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